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RESPONSIBILITIES OF MEDICAL PROFESSION IN HEALTH PROGRAM OF PUBLIC SCHOOLS *

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Children are legally required to attend school usually not less than ten years. The mere fact of assemblage immediately creates a health problem. A proper environment for building and grounds should be the first consideration. The character of the building with reference to light, ventilation, heating and capacity is equally important. These may be perfect but are greatly offset if there are in attendance either teachers or children whose physical condition is a menace.

Recently a director of a consolidated rural school telephoned to me and described this situation: "The new term of school opened this morning. At midday a boy who had been in a room with forty children throughout the forenoon complained of illness. He was taken to a doctor and found to be in the eruptive stage of scarlet fever. Now what shall we do? Should the children be vaccinated? Should the building be fumigated? Should school be closed temporarily?" In this manner a preventive problem is imposed on every board of education. School authorities and the laity in general turn to the medical and nursing professions for advice and assistance. Of such character was the original contact between medical service and public schools in this country. The inexperienced person cannot imagine the variety of perplexing situations that arise in connection with attempts to eliminate contagious disease from school children.

A natural sequel of inspection of children in attempts to control contagion was to focus attention on their physical defects. In the first half of the present quarter century, many surveys of physical conditions were reported. Statistics (perhaps "figgers" would be more appropriate!) may be found which revealed any degree of imperfection from 50 to 100 per cent. Suffice it to say that these defects were, of course, extremely varied in character and legion in number. Then the war came and we were constantly advised of the physical imperfections of the nation's manhood. "The child of today is the nation's defender of tomorrow" was a popular theme. Food conservation became a national zeal. Health, nutrition, relative food values were heralded to the people as never before. Service was the watchword, and its every type was portrayed in the garments of patriotism. Conservation of health in every conceivable form was urged on school authorities by parents' organizations and lay clubs. With the aid of the Amalgamated Scale Producers of America and Dairy Products Supreme, Inc., scales were installed in thousands of schools and milk was served to all children who would take it. Relief organizations were popular. In some localities, school quarters were converted into surgical clinics over the week-ends. The national government assumed full leadership in public health affairs, and organizations were fostered as never before. Some school authorities were engulfed in the wave of service and have continued to build into their programs activities which savor more of physical relief and restoration than of education.

The period immediately following the war was an open sesame for various types of welfare and public health workers. Too often were they possessed of little training, experience or judgment, to say nothing of educational philosophy. Many found their way into school activities and added confusion rather than clarification to problems already befogged. Having "won the war," much energy was released from national defense and devoted to various activities such as promotion of infant welfare, physical examination of children, diphtheria vaccination campaigns, county health units, and the restoration and education of crippled children. The latter has had an international urge and is reflected in the legislation of many states and in the development of special hospitals and schools for crippled children. Schools vary in their policies from no treatment physically to rather complete services in appliances, orthopedic advice and treatment, nursing and physical therapy.

Meanwhile there has been much reflection on the causes of the defects in the nation's manhood as revealed by the draft. Many of them were obvious results of conditions manifestly present in school children. The defects are not racial. They are not geographic. They are not economic. These factors produce variations in kind rather than in degree, and fail to influence the composite picture of physical fitness. Under such circumstances, analytic persons engaged in education attempted to appraise school programs in relation to health. Such questions as these were raised: Is it possible to increase physical efficiency by means of education? Is it possible to teach health? Can the next generation be improved by education of this one? Courses in so-called hygiene and physiology were searched for ultimate values as expressed in personal habits. They were sadly wanting. Children's habits and knowledge of practical hygiene were studied and found to be little influenced by the old courses, which often had neither motive nor application. As a result there has come into being a new concept and a new term—health education. This expression has found

*Read before the Missouri Valley Medical Society, Sept. 25, 1929, at Iowa City.

favor because it is comprehensive. The philosophy back of it is gaining acceptance because it seems practical. It is twofold. First, it attempts to establish in the child's mind the relation between environment and habits and health. Secondly, it attempts to develop habits and knowledge and attitudes on his part which promote his physical well being. The development of this concept, its exhibition to him throughout his school life, and his adoption of habits and attitudes which promote better health constitute health education. That such instruction is desirable is accepted by all. How and by whom it should be taught provokes much difference of opinion.

School authorities have often expected too much from the medical profession. Sometimes they have wanted the impossible, forgetting in their ardor that seed as well as soil determines the growth. On the other hand, service rendered by school physicians has often been of disappointing character. Frequently inspectors have magnified conditions of no consequence—perhaps unconsciously to merit the approval of an overenthusiastic educator; possibly to justify their own jobs, certainly without appreciation of educational values. Such service can only reflect discredit on both the educational and the medical professions.

Physical education has been expanding and has been made compulsory by legislation in many states. Some legislative bodies have included "health instruction" along with it, stating a minimum time allotment. Physical education has also been drawn toward the field of restoration. Any well rounded course for teachers now includes training in corrective exercises, and many school plants include corrective gymnasiums with special apparatus. This has presented another type of problem in the background of which medical judgment is needed.

Additional groups of children in whose program school authorities need medical advice are those with cardiac deficiency, chorea and other types of nervous instability, constitutional inferiority, and serious defects of vision, hearing or speech. There are also the behavior cases in which physical conditions must always be considered. A review of the development of school health programs during the last ten years impresses one that often it has been out of the hands of sound educational guidance and frequently without judicious medical advice. It is not surprising, then, that there should be little standardization and that fundamental principles have been slow of recognition and acceptance.

FUNCTION OF PHYSICIAN IN THE WORK

Having sketched the background of the present situation, I turn more directly to a consideration of the relation of medical men to the program. This discussion is based on the fact that the school is an educational institution and not one of relief. Other organizations should assume responsibility for relief and medical treatment. It is further presumed that all medical service rendered the school should be for compensation. Every proposed activity in a school health program should be appraised for its educational values before being put into practice. Medical guidance is eagerly sought by educational authorities; but we, as counselors, must be willing to have our proposals closely questioned for their real values. The most essential quality for a physician who would encourage this program is the preventive point of view. Without it he can develop neither sympathy nor understanding. If inflammation, induration, pus and disability are required to arouse a physician's interest, he will find little in this to sustain him.

In the actual conduct of the work, the control of contagions may be considered first. This is the only activity in which the school physician is cloaked with any legal authority. Boards of education may adopt their own rules of exclusion as long as they do not conflict with the requirements of city or state boards of health. Obviously, school authorities should work in harmonious cooperation with the city health department and other health agencies in the community. We have cultivated this by arranging headquarters for our school nurses in the city hall, adjacent to the public health nurses and the city health department. The development of common interests and the exchange of information which this relation affords is invaluable. Cooperation by the physician in practice is equally essential. This is best expressed by his support of regulations pertaining to exclusion, and by promoting the established vaccinations among his contacts. In communities that have an organized health unit in the schools, the complete cooperation of the medical profession is deserved. In smaller communities there should be complete cooperation between school authorities, health officers and local physicians. They could anticipate the occurrence of acute contagions and plan for control of them. This alone would offer a challenge to constructive thought. Further plans for progressive health measures for children should be a logical outgrowth. Physicians who are members of boards of education can render a distinctive service in this respect.

Vaccination against smallpox and diphtheria has been frequently offered in school groups. The procedure must be justified on the grounds of service, convenience, education or efficiency. In our present social status the school is not primarily engaged in service. If offered as an educational demonstration, vaccinations should not be repeated from year to year. That becomes service. If offered in the interests of efficiency, one must weigh the disadvantages of assuming parental responsibility against the benefits of efficiency. If conducted in the interests of convenience and economy, the burden should rest with the parents and the medical service should be paid for. Control of contagious disease in any community is possible in a large measure if the school forces and medical profession will unite on an educational program. Emergencies may arise in which the city health department may find it advisable to assume control in its full sanitary authority. This is much more easily and effectively done when there has been rational education.

In our own city no free diphtheria immunization has been offered except to indigents at the health center. Schick tests were made in kindergarten groups for about three years as an educational aid in acquainting people with the possibilities of immunization. This was discontinued four years ago. Formerly we had among our school children from 150 to 200 cases of diphtheria annually, with about 15 per cent mortality. In the last three years we have not averaged more than five cases a year. We consider our children fairly well protected.

Uniform smallpox vaccination under ordinary conditions has been more difficult. On occasion, the city health department has exercised its sanitary authority. In no instance has the situation gone beyond control. Two years ago some ninety cases of smallpox appeared within a five day period in abouty twenty-five different schools. Parents were advised in writing that nonvaccinated children in exposed schools would be excluded the next morning and that the city health

department would offer free vaccination. Representatives from the school and city departments worked as teams. They went to the schools together. The school physician excluded all children without scars. The physician from the city health department vaccinated immediately all those who presented "requests for vaccination" if signed by the parents. The newly vaccinated children were readmitted by the school nurse as soon as there was evidence of successful vaccination. Those not vaccinated were kept out for two weeks. Local distributors of vaccine estimated that the amount of vaccination by private physicians greatly exceeded that done by the health department. This epidemic was checked at once. The total number of additional cases among school children for the remaining six months of the school year was about sixty.

Medical inspection or physical examination of children at school may be made a valuable educational feature. The term "inspection" is preferred in order to distinguish it from the comprehensive procedure which "examination" should convey. Recently we have been hearing much discussion of periodic health examinations. Obviously, one of the purposes of such examinations is to discover unfavorable developmental tendencies in order that they may, if possible, be influenced favorably. The more rapid the growth period, the oftener the examination should be repeated. The monthly examination of well infants has abundantly justified itself on this basis. It is a practice that is growing in the appreciation of the laity because of its results. It should be continued at intervals of six months through the preschool period. During school age an annual examination by the family physician is the desirable schedule. It is not the usual custom. Every physician knows the extent to which it is done or is not done in his own community. We do not advocate an annual medical inspection at school. That lessens the educational value to the parent. We repeat it every third year, and teach that it should be done annually as a parental responsibility. In other words, the outstanding educational objective of the school medical inspection should be the periodic examination on parental responsibility.

Is this a proper objective? Is the school wrong in teaching that preventive medicine offers a value in periodic examination? Do our educators place us in a false position in so teaching? What is the origin of periodic examination? Did the school conceive it and foist it on us? Or did it originate with us and find acceptance in the school? There are men of influence in our profession who condemn the whole procedure of medical inspections in school except for control of contagion. To them we say, if the theory of periodic examination in childhood is not sound, let the medical profession retract it and with a single stroke render impotent such practice. If the theory is sound, then its satisfactory conduct becomes a matter of administration. If it is sound do not we, as physicians, have an obligation to bring to light its hidden values for the benefit of child health?

Inspections at school can be of only a "directing" character at best, somewhat like the examination of the admitting officer of a general hospital. They cannot be final in any sense. Parents and teachers frequently expect too much of them and school physicians sometimes assume too much. The errors of both are only human. Rapid fire inspections made without the removal of clothing are worse than nothing. In an established routine a fair inspection may be made in five minutes and still have time for some worth-while remarks. A two hour session of this character is enough for one day. The examiners' approach is quite likely to fall below par after two hours.

The educational value of the procedure is greatly enhanced if the parent can be present. He usually senses the preventive point of view and accepts the results of the inspection for their value. By his presence he increases the child's respect for health measures. Minor physical imperfections that have no known bearing on health or appearance should not be mentioned. Form and function in relation to health and development are the important considerations. Defects in vision, in the teeth, nose and throat, and in the heart, as determined in school inspections, are usually confirmed by the profession. Other defects not so well accepted are poor development of the chest and muscular system, malnutrition, moderate spinal curvatures, faulty posture and flat feet. Often such as these are not confirmed by the practitioner. Are they discounted too much in private consultation? Perhaps they are more obvious when compared with other children in group inspections. Many of these are due to faulty muscular development and are amenable chiefly through physical exercise.

In this connection the results of physical inspection should be carried over into physical education and the child given those activities which are appropriate for him. This is what we try to do in our own school program. Formerly, classes in physical education were made up of pupils not otherwise scheduled at a given period. Now they are scheduled according to their abilities or needs as determined by the physician's inspection. As a result, groups are more uniform and activities rationally chosen for the whole group. Improvement by exercise of normal function—as in physical education—is worthy of more consideration in preventive medicine. Earnest attempts in developing such coordinations in our schools are deserving of the consideration and support of the medical profession.

A more recent development in school health measures is the use of the group audiometer to determine incipient loss of hearing. Its use has been spreading and its value will undoubtedly cause it to come into more general use. We all realize how little has been solved in the problem of deafness. Even the tests of function have been poorly standardized. Heretofore, deafness in school children has received consideration only after it has become obvious. With the judicious use of the audiometer, it should be possible to refer to the otologist incipient and potential defects in hearing. Surely we may hope that more help may be obtained if the condition is known early. If the child cannot be helped, he may at least be referred for instruction in lip reading before hearing is too greatly impaired.

In our schools last year, 10,389 were examined with the audiometer. Three tests at intervals of several weeks were made for those with impaired function before they were listed as defective. Of these, 359 children (approximately 3.5 per cent) were found to have lost from 9 to 15 sensation units in one or both ears; 160 children (approximately 1.6 per cent) had lost from 15 to 25 sensation units; eighty-seven children (approximately 0.8 per cent) had lost 25 or more sensation units. Those with a loss of 25 or more units had already been classified by their teachers as having impaired hearing.

The development of special schools for the training of handicapped children creates a considerable problem

in which medical counsel is required. Children in such groups are undernourished, or present marked defects of vision, hearing or speech, cardiac disorders, chorea, nervous instability, or crippled or mental deficiency. These may be assembled in one building or segregated in accordance with the local policy. Together with the psychologist, the physician should determine who is to be admitted. According to their policies these institutions may resemble hospitals where some teaching is done or they may be schools with some special facilities for the accommodation and development of those with physical handicaps. In some cities crippled children are kept in special schools as long as possible, making them by training apparently "once a cripple, always a cripple." In other cities they are returned to their regular schools as quickly as possible. Some schools have rather complete medical and nursing services, imposing on themselves a problem of service which in our opinion should be borne elsewhere. Assumption of responsibility for treatment, even in this group, may lead one far astray in policies of administration. With such restrictions on service as will maintain the educational emphasis in the school, a certain amount of physical therapy may be attempted. The policy of the school should be to administer this therapy in accordance with the prescribed request of the physician who is responsible for the child. Medical service by the school should be of only a supervisory character.

Much has been said about the health of children. More needs to be said about the health of teachers. Their personal health history should be known when their applications are considered. If it is not feasible to have them examined before employment by a physician of the board's selection, their contract should provide for it soon after. The results of this examination should enter into consideration in a renewal of the contract. In no other type of work is there any greater moral obligation to be in good health.

CONCLUSION

I have tried to set forth some of the factors in the background, some of the practical points in the conduct of the work, and the present state of flux of school health programs in such a way as to indicate the necessity of sound medical advice. In the development of the relation between the school and the medical profession, certain principles in accordance with present-day social standards have been observed: (1) that the function of the school is educational, and (2) that adequate compensation should be paid for medical service. Advice of mere medical origin is not sufficient. It should come from those who understand the medical problems of childhood, child psychology, something of physical education, and the possibilities of school adjustment. The school health program is of utmost importance to child health. The medical profession can and should make a valuable contribution of it.

410 Sixth Avenue.

Emotional Factor in Disease.—There is no state of bodily suffering, of whatever kind or degree, whether functional or organic, which does not include an emotional factor among its components. The importance of this emotional factor in any given disease depends as much on the quality of the psychological panel of that particular patient as upon his life experience. Consequently, a physician is not justified in taking the responsibility for the management of a patient's disease problem unless either he himself, or some competent specialist whom he may call, investigates the psychological panel as carefully as he does the other panels.—Draper, George: Disease and the Man, New York, Macmillan Company, 1930, p. 259.

ALLERGIC INSULIN REACTIONS

REPORT OF A CASE EXHIBITING SEVERE GASTROINTESTINAL ALLERGIC REACTIONS FOLLOWING INJECTIONS OF INSULIN *

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Reactions are commonly observed in diabetic patients to whom insulin is administered. Their exact cause is in dispute. In the vast majority of instances, however, they are associated with a low blood sugar. The symptoms usually noted are hunger, extreme nervousness, sometimes palpitation and rapid heart action, and occasionally bradycardia. If the phenomena occur when the patient is asleep, he may have nightmare in which he will moan or scream. When they are sufficiently violent, he may become comatose or have convulsions. Death may follow. Reactions of this kind are usually caused by the excessive hormone action of insulin and are easily corrected by the ingestion of readily assimilated food or by the administration of dextrose.

A second type of reaction is observed which is allergic in character. Insulin is a protein-bearing compound in which the protein fraction is reduced to a minimum. The pig and the beef pancreas have been the chief source of supply, while the pancreas of sheep, fish and birds has been used experimentally and in the future may be employed clinically. Allergic reactions to insulin have been rarely noted in the literature on diabetes, although they are known to occur quite frequently. The phenomenon is independent of the size of the dose and is not in any way dependent on the hormone activity of the insulin. In view of these facts and since it is impossible to produce a protein-free insulin, it may be desirable in the future for manufacturers to state on their package the animal source of the product.

HYPERSENSITIVITY AND ANTIANAPHYLAXIS

The explanation of hypersensitivity is somewhat conjectural; furthermore, its true significance and importance in clinical medicine are not sufficiently appreciated. Cooke[1] accounts for the phenomenon in the following plausible fashion:

> When a small quantity of a foreign protein is injected into a normal animal, the protein acts as an antigen and stimulates the body cells to produce a specific antibody. This antibody remains attached to the cell, and if, later, the same protein antigen is injected, a combination of the cellular antibody with the antigen takes place in the cell with the production of toxic substances, and clinical symptoms of poisoning appear. Such an animal with intracellular antibodies present is said to be sensitized or hypersensitive, since the cells have acquired a greatly increased capacity of reacting with the specific protein; and the reaction which takes place is known as an anaphylactic or hypersensitivity reaction. There may be different degrees of hypersensitivity, apparently dependent upon the amount of intracellular antibody present, with a consequent variation in the capacity of the cells to react with the antigen.

If, instead of a single dose of foreign protein antigen, multiple injections are given to a normal animal at short intervals, antibodies are formed in much larger quantity by the cells and appear in the circulating blood. When the same antigen is given to such an animal later, the excess of circulating antibody combines with it and thus prevents the contact of the antigen with the sensitized cells. Such protection of the cells by cir-

* From the Highland Hospital.

1. Cooke, J. V.: The Relation of Bacterial Allergy to Scarlet Fever, J. Allergy **1**: 25.

culating antibody is known as antianaphylaxis, or masked sensitivity. The cells, however, retain their sessile antibody and remain hypersensitive, so that if the excess of circulating antibody disappears, this sensitivity is again unmasked, and later injection of the antigen will produce an anaphylactic reaction. In the hypersensitive state, then, the specific antibody is largely attached to the body cells with only a slight amount in the circulation, while in the antianaphylactic state there is a large excess of circulating antibody.

The commonest manifestation of an allergic reaction is evidenced by the appearance of an area of localized erythema about the site of the injection which resembles a mosquito bite. Fortunately this trouble is easily corrected by the oral administration of small doses of calcium lactate. It has never been a troublesome factor in the treatment of diabetes. On rare occasions, more severe anaphylactic reactions are observed. The first insulin made by the University of Toronto was rich in protein. I have reported a case in which the most profound hypersensitiveness was caused by the use of this material. In this case, it was possible to desensitize the patient by the method suggested by Jobling. When purified insulin was available, no further difficulties were experienced. This patient has now used insulin continuously for seven and one-half years, in three doses daily, without ill effects other than occasional skin reactions.

Quite recently another case has come under observation which was quite as startling and in which death undoubtedly would have occurred had not the condition been recognized. Because of the extremely critical condition of the patient, allergic studies were not made, reliance being placed on the therapeutic test. It is reported, however, in the firm belief that the conclusions are correct and with the thought that it may be suggestive or helpful to some other worker in diabetes who may be confronted with a similar serious case.

REPORT OF CASE

A boy, aged 12 years, had had diabetes since the age of 7, but for the first two years it had been mild. He was first admitted to the metabolic department of the Highland Hospital, May 26, 1927, where he was studied over a period of seventeen days. When he left the hospital the digestion of blood sugar was within the normal range, the urine was sugar free, and he was able to utilize between 130 and 140 Gm. of dextrose. Ten units of insulin in two doses was given daily. His insulin coefficient, as determined by the method that I[2] have described, was 25, which means that the pancreas was able to make approximately 25 units of insulin in twenty-four hours. This classified him as having moderately severe diabetes. The pancreas of a normal person has an insulin producing capacity of from 75 to 300 or more units daily. In the months of July and August the patient showed continued improvement, as is commonly observed in all properly adjusted diabetic patients. The insulin coefficient had risen to 36.

Feb. 23, 1929, the patient was again admitted to the clinic because of severe acidosis and impending coma, which had been precipitated by a double middle ear infection. At this time his diet contained 153 Gm. of dextrose, of which he was utilizing about 116 Gm. daily, with the aid of 55 units of insulin in divided doses. Normally 116 Gm. of dextrose would require for its utilization 29 units of insulin, whereas the patient was being given 55 units, or 26 more than the normal requirement. Thus he had a coefficient of minus 26. An explanation of this deficit is either that the infection was preventing the proper functioning of the insulin or that the dosage was in excess at certain times of the day and accordingly was being wasted. The former explanation is probably the true one, for this phenomenon is observed in all acute infections in diabetes; namely, the utilization of dextrose is impaired and larger amounts of insulin are required to maintain a given dietary level.

The patient was given prompt surgical relief and was discharged, March 5, in good condition. While he did not regain his former metabolic capacity, represented by an insulin coefficient of 36, after a few weeks he did reach a state of positive balance.

October 26, the patient was again admitted in a comatose condition complaining of severe abdominal pains and cramps suggestive of pyloric spasm. He made a prompt recovery following the intravenous administration of salt solution and alkali and the use of repeated small doses of atropine. Subsequent physical and roentgen examinations of the abdomen did not disclose any abnormality.

November 10 the patient was readmitted with a similar history of severe abdominal distress. He frequently vomited large amounts of clear watery fluid. He appeared to be having periodic attacks of pyloric spasms. From November 10 to November 18 the patient was practically unable to take any food by mouth. Even water caused distress and could not be retained. Bowel injections of small quantities of fluid could not be tolerated. The patient was kept alive by the intravenous use of dextrose and salt solutions. Large and varying doses of insulin were given subcutaneously. Profound acidosis was evidenced by a marked ketonuria and the presence in the urine of large amounts of ammonia. His body was severely dehydrated. Notwithstanding the fact that he was given from 40 to 80 units of insulin daily with an insulin coefficient ranging from minus 27 to minus 48, it was impossible to control either the glycosuria or the acidosis. The abdomen was exquisitely tender throughout. There were no clinical signs of gastro-intestinal disease other than the cramps. There was a persistent leukocytosis of about 20,000 cells. No eosinophilia or other blood disturbance was noted. The advice of a surgical consultant was sought. A gastro-intestinal roentgen examination was impossible at this time. The opinion was ventured that the patient had a surgical lesion of the abdomen of obscure character and that an exploratory laparotomy was advisable, but the patient was far too ill for such a procedure to be undertaken.

During this period, the means that had been employed successfully in the previous attacks failed. November 18, while standing at the bedside of the dying child with a feeling of profound despair at the apparent helplessness of the situation, I recalled a remark once made by William J. Mayo; namely, that allergic reactions sometimes produce startling gastro-intestinal phenomena simulating severe gastric ulcer or gall-bladder disease. Since then I have read Duke's[3] interesting account of this unusual manifestation of hypersensitivity.

Acting on this suggestion, I decided to change the type of insulin. Up to that hour I had employed insulin derived from the pancreas of the pig. For this, one prepared from the pancreas of the beef was at once substituted with the most astonishing results. Within forty-eight hours the patient, who had appeared to be hopelessly in the throes of death, was eating solid food and sitting in a chair.

A complete gastro-intestinal radiographic study was then made, with essentially normal results throughout. It was reported that, aside from a slight spasticity about the region of the pylorus, the examination was without significance. The patient left the hospital, December 5, in good condition with an insulin coefficient of approximately plus 10, which after three weeks had increased to 15 with corresponding clinical improvement. Prior to the change in the brand of insulin, November 18, he had not been able to tolerate any food in the stomach. Within twenty-four hours after the change, he was given more than 2,300 calories and was able with his insulin dosage to utilize 180 Gm. of dextrose. Since no treatment was instituted to bring about this remarkable result other than changing from insulin of pig origin to that of beef, it is a fair inference that the patient was suffering from an allergic attack involving the pyloric end of the stomach and due to pig protein.

2. Williams, J. R.: The Clinical Interpretation of Diabetes, J. Clin. Investigation **7**: 524 (Aug.) 1929.

3. Duke, W. W.: Food Allergy as a Cause of Pain, Arch. Int. Med. **28**: 150 (Aug.) 1921.

CONCLUSIONS

Insulin is a protein-bearing compound used daily by thousands of patients throughout the world. It is administered in a manner that lends itself most readily to the production of allergic reactions. Many diabetic patients exhibit evidences of hypersensitivity to insulin in local skin reactions which are seldom of serious importance and may easily be corrected by the oral use of calcium lactate. More serious allergic reactions involving other parts of the body occasionally occur which are not recognized as such. In this paper an almost fatal reaction involving the gastro-intestinal tract is recorded. It is suggested that those charged with the responsibility of treating diabetic patients bear this phenomenon in mind and that patients be accordingly instructed, and also that manufacturers of insulin mark on their packages the animal source of their product.

FATAL POST-TRANSFUSION REACTIONS *

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DETROIT

One cannot help being impressed by the rare occurrence of death immediately following and directly attributable to blood transfusion. There have been two such accidents in 4,000 transfusions that I have performed, which constitutes a mortality of 0.05 per cent. In view of the uniformly beneficial results derived from transfusion, with which all physicians are familiar, the procedure frequently assuming the proportions of a miraculous life-saving operation, the mortality is insignificant and compares favorably with that caused by other forms of treatment. No intravenous procedure is entirely free from danger. The mortality following arsphenamine injection is nearly that which follows blood transfusion. When a blood transfusion is clearly indicated and necessary, as all surgical and medical treatment should be, the risk is negligible because the end justifies the means.

Post-transfusion reactions may be classified as: (1) those due to incompatibility; (2) chemical reactions, and (3) allergic reactions.

In this series of 4,000 cases, incompatible blood was transfused in six instances: twice because of a clerical error in reporting and four times because the group III diagnostic serum had deteriorated, the donor being supposedly in group IV, which was the group of the patient, whereas group IV recipients were actually given group II blood. No fatalities occurred in four cases, and in the other two the patients were in a moribund state before the transfusion. The danger of using an incompatible donor is most serious when the patient is unconscious or semicomatose, because then a large amount of blood must be given before the operator realizes the situation. If the recipient is alert, the signs and symptoms produced will be easily detected and will warn the operator of the existing danger early enough to stop the flow of blood before serious consequences are produced. A reaction to incompatible blood usually occurs before 50 cc. has been given and consists principally of lumbar or abdominal pain associated with dyspnea and cyanosis. In the past six years no error in blood grouping has been detected in our laboratories, as a result, I believe, of the adoption of a simple precaution,[1] consisting of the employment of group IV diagnostic serum in addition to the groups II and III ordinarily used. This will enable one to detect a lack of agglutinating titer in either group II or group III diagnostic serum.

The existence of more than two ischemagglutinins, making more than four blood groups possible, has been satisfactorily proved.[2] This fact is interesting and yet its practical application is not far reaching, for there is ample and valuable clinical proof that only the usual four groups need be considered. There is occasionally slight irregularity in the speed and completeness with which the cells of some group II individuals agglutinate and this has led to the conclusion that when both the donor and the recipient are in group II a mildly dangerous combination sometimes exists from the standpoint of unpleasant sequelae.

When the proper technic of blood grouping is followed and reliable reagents are used there is no need for cross agglutination. Statements to the contrary are sometimes made but experience has so strongly convinced me on this point that I am sure I shall never adopt cross agglutination as a routine procedure.

Occasionally physicians are admonished against using "universal donors," the inference usually being that such practice is careless and the result of laziness. Extensive clinical investigation in connection with my series of cases has definitely shown such an attitude to be without substantiation and quite contrary to fact. In a transfusion, as far as compatibility is concerned, the sole interest is that the plasma of the recipient does not agglutinate the cells of the donor. The exceptions to this are negligible. With this in mind, group IV blood is the safest and most ideal to give both theoretically and practically because group IV cells are not agglutinable by any agglutinins. Besides, the promptness with which a group IV donor usually can be secured may often save the life of the patient. Furthermore, individuals remain in the same blood group throughout life, so that once a donor is properly typed there need be no apprehension of his group changing. Apparent exceptions occasionally occur but further investigation has always revealed an error in grouping.

Chemical reactions are usually caused by some anticoagulant or some chemical contamination from rubber tubing. The incidence of post-transfusion reactions in this series was reduced from at least 25 per cent to between two and four cases per hundred and the severity was markedly decreased by changing from the citrate method to the giving of unmodified blood. Other factors probably influence this result, such as increased speed and elimination of cooling.

The so-called anaphylactic reaction is not clearly understood. The name implies protein sensitization and some have suspected food allergy, which led Brem, Zeiler and Hammack [3] to experiment with fasting donors with favorable results. Hanzlik and Karsner [4] state that:

> The intravenous injection of certain agents such as serum, diphtheria antitoxin, foreign proteins and arsphenamine pro-

* From the Department of Pathology, Jefferson Clinic and Receiving Hospitals.

* Read before the Macomb County Medical Society, Mount Clemens, Mich., Jan. 6, 1930.

1. Brines, O. A.: The Transfusing of Unmodified Blood, Arch. Surg. **16**: 1080 (May) 1928.
2. Guthrie, C. G., and Huck, J. G.: Existence of More Than Four Iso-Agglutinin Groups in Human Blood, Bull. Johns Hopkins Hosp. **34**: 37 (Feb.), 80 (March), 128 (April) 1923.
3. Brem, W. V.; Zeiler, A. H., and Hammack, R. W.: Use of Fasting Donors: Preliminary Report, Am. J. M. Sc. **175**: 96 (Jan.) 1928.
4. Hanzlik, P. J., and Karsner, H. T.: Anaphylactoid Phenomena from the Intravenous Administration of Various Colloids, Arsenicals and Other Agents, J. Pharmacol. & Exper. Therap. **14**: 379 (Jan.) 1920.

duce in some individuals disturbances which resemble the symptoms of anaphylactic shock. It is alleged that in these individuals a state of anaphylaxis exists or, at least, an unusual degree of sensitiveness, presumably the state of sensitization, although in many instances such individuals have not been (previously) treated with the agent. This is particularly true of such agents as arsphenamine, while with proteins, no matter what the source, sensitization might conceivably exist. This is rendered less probable in view of the fact that similar responses, which might be conveniently designated as "anaphylactoid phenomena," occur after the injection of various nonprotein colloids into previously untreated or normal animals. Among such agents are kaolin, starch, inulin and agar. . . . From this fact, and, also, since proteins are colloids it has been alleged that the anaphylactoid symptoms, if not anaphylactic shock itself, are essentially a colloid phenomenon. . . . Consequently, the disturbances . . . following the injection of various agents in unsensitized animals do not necessarily constitute true anaphylaxis or anaphylactic shock.

Four years later Hanzlik [5] concluded that "the anaphylactic and anaphylactoid phenomena, collectively the allergic phenomena, appear to rest on a common basis, namely, on disturbances in the physical and chemical (colloidal) mechanisms of the blood and tissues."

There are other types of reactions which do not readily classify under these three headings. The delayed reaction, which is usually mild and which occurs several hours and sometimes the day following the transfusion, cannot be satisfactorily explained at the present time.

Blain [6] has called attention to nephritis as a contraindication to transfusion because of the severe reactions sometimes produced.

No attempt has been made to collect the reported cases of fatal post-transfusion reactions. Carrington and Lee [7] in 1921 reported the occurrence of a typical example but there have been few others in the last ten years.

The patient described by Carrington and Lee was a white man, aged 75, who received a transfusion because of severe anemia. Both the recipient and the donor were in group III. Five hundred cubic centimeters of blood was given, mixed with sodium citrate dissolved in freshly distilled water. The blood grouping was checked by cross agglutination. The rubber tubing had been properly prepared and was above suspicion. One hour after the transfusion was finished the patient became dyspneic and there was laryngeal stridor. There was slight cyanosis but no evidence of cardiac dilatation. The patient was conscious and there was no paralysis. Seven hours after the transfusion, he developed symptoms of pulmonary edema and then became comatose and died ten hours after the transfusion. An examination of the blood before death showed no clumping or hemolysis, and there was no hematuria or hemoglobinuria.

My first case of death following a transfusion is similar to the one just described:

A young white woman was given a transfusion in an attempt to combat a postoperative infection. Her husband served as donor, and both recipient and donor were in group II. About forty minutes following the transfusion she had a severe chill lasting twenty minutes. Following this there was marked hyperpyrexia, the axillary temperature being 105 F. and the pulse 136 a minute. She was irrational during the chill and for about one hour afterward. There was also twitching of the entire body and a marked nystagmus. The temperature remained high and the pulse increased to 150 a minute. Eight hours following the transfusion the patient was unconscious and she died two hours later.

My second fatality occurred nineteen months following the first:

A white woman, aged 20, was admitted to the hospital when three months pregnant with a diagnosis of vomiting of pregnancy. She became somewhat less nauseated within a few days but was irritable and hysterical even to the point of delirium, which lasted a few days. She was discharged from the hospital but returned in a week in an extremely poor condition. The physical and laboratory examinations on both admissions were essentially negative. A therapeutic abortion was performed. Immediately following this the patient's condition was poor, but after dextrose had been given intravenously and fluids forced, her condition improved during the next forty-eight hours. At this time, however, a transfusion was decided on; her husband was used as donor, and both recipient and donor were in group IV. During the transfusion the pulse and respirations were normal and the patient's condition seemed satisfactory. Five hundred cubic centimeters of unmodified blood was given. About two minutes after the transfusion was finished the patient suddenly gasped, became cyanotic and died. Cross agglutination showed no evidence of incompatibility. An autopsy was performed but no definite explanation was revealed for the sudden death. The pathologic diagnosis was active syphilitic myocarditis with coronary arteritis.

These two cases are somewhat different in that death occurred ten hours after the transfusion in the first case while in the second case the reaction was explosive in character, death occurring within a few minutes after the transfusion.

In this series of transfusions there were three nonfatal post-transfusion reactions similar to the second fatal one just described. The reaction occurred in each case within five minutes after the transfusion was completed and consisted of definite convulsions, cyanosis, unconsciousness, slow respirations and a rapid feeble pulse. In two of these cases the reaction was only moderately severe and the condition of the patients returned to normal within an hour. In the third case, however, the reaction was intensely severe. The radial pulse was not perceptible and the respirations consisted of two or three gasps a minute. Complete unconsciousness lasted for more than an hour and the patient was delirious for two days. Tertiary syphilis was one of the clinical diagnoses. In all of these cases cross agglutination checked the blood grouping.

In three other cases of my series I believe that the transfusion was a contributary factor in the death of the patient. In all of these patients a previously well established diagnosis of chronic nephritis had been made. The reactions were typical, consisting of a chill, an elevation in temperature, lumbar and abdominal pain, some dyspnea, and either oliguria or anuria. In each case there was an apparent exacerbation of the kidney disease. The blood urea became elevated, symptoms of uremia were apparent, coma followed, and death intervened in from four to eight days.

These reactions are similar to one reported by Witts.[8] His patient was given a transfusion because of a moderately severe secondary anemia. The urinalysis was negative. The patient had complained of shortness of breath, dizziness and swelling of the feet at night since the birth of twins three years previously. The patient and donor belonged to group II and careful matching was done. The citrate technic was employed.

5. Hanzlik, P. J.: The Basis of Allergic Phenomena, J. A. M. A. **82**: 2001 (June 21) 1924.
6. Blain, A. W.: Impressions Resulting from Three Thousand Transfusions of Unmodified Blood, Ann. Surg. **89**: 917 (June) 1929.
7. Carrington, G. L., and Lee, W. E.: Fatal Anaphylaxis Following Blood Transfusion, Ann. Surg. **78**: 1 (July) 1923.
8. Witts, L. J.: Note on Blood Transfusion with an Account of a Fatal Reaction, Lancet **1**: 1297 (June 29) 1929.

Following the transfusion the patient complained of headache; her temperature rose to 102.6 F., and she vomited occasionally for the forty-eight hours following the transfusion and then developed pain in her back. A complete anuria persisted for six days following the transfusion, at the end of which time the blood urea was 333 mg., per hundred cubic centimeters of blood. The patient became drowsy and died on the eleventh day.

Oliensis [9] reports a case in which acute nephritis developed following a transfusion in a patient who had never shown any previous evidence of nephritis. The blood was taken from her brother, who was a perfectly compatible donor. The Unger whole blood method was used. Three minutes after the transfusion was completed the patient had a severe reaction consisting of a chill, marked pallor and cyanosis. The radial pulse was not perceptible and nausea and vomiting were present. Fever and shock continued for two days with the development of jaundice on the third. She voided only a few drops of urine every twenty-four hours. Five days after the transfusion the blood nitrogen was 285 mg. per hundred cubic centimeters and the urea nitrogen 150. One month following the transfusion the patient's condition returned to normal and the blood showed no retention of nitrogenous substances.

Bancroft [10] described a case in which anuria persisted for nine days following a transfusion, the total urine secreted during that time being only 35 ounces (1,035 cc.). A decapsulation of both kidneys was done, followed by gradual relief of symptoms and complete recovery.

SUMMARY

Two fatal post-transfusion reactions occurred in a series of 4,000 transfusions. Three similar severe but nonfatal reactions also occurred. In three other cases the transfusion might have been an indirect cause of death. In nearly all of the 4,000 cases, the transfusions consisted of unmodified blood given by the author's modification [1] of Unger's [11] technic. In none of these cases could the reaction be explained on the basis of incompatibility nor could there have been chemical poisoning in the ordinary sense. This type of reaction is usually referred to as an anaphylactic or "anaphylactoid" shock; however, knowledge of the exact mechanism is vague. It has been suggested that agglutination and degeneration of the platelets might be a factor, and Doan [12] believes that many of these reactions are due to incompatibility of the white corpuscles. The occasional development or aggravation of nephritis following transfusion is difficult to understand. If one believes that this type of reaction is a true anaphylactic shock, the suggestion presents itself that a test for serum sensitization might be made before each transfusion, but the rare occurrence of such phenomena would probably serve to discourage the conscientious application of such a test.

In view of the results desired and usually obtained from transfusion, the mortality resulting from the procedure is rather insignificant in comparison with the mortality prevented by it.

9. Oliensis, A. E.: Acute Nephritis Following Transfusion, M. J. & Rec. **128**: 178 (Aug. 15) 1928.
10. Bancroft, F. W.: Anuria Following Transfusion, J. A. M. A. **84**: 142 (Jan. 10) 1925.
11. Unger, L. J.: A New Method of Syringe Transfusion, J. A. M. A. **64**: 582 (Feb. 13) 1915; **69**: 2159 (Dec. 29) 1917.
12. Doan, C. A.: Recognition of Biologic Differentiation in White Blood Cells with Especial Reference to Blood Transfusion, J. A. M. A. **86**: 1593 (May 22) 1926.

CONCLUSIONS

1. In a series of 4,000 transfusions of unmodified blood, the mortality was 0.05 per cent.
2. Incompatibility of blood was apparently not a factor in the production of these reactions.
3. Cross agglutination of the blood of the donor and that of the recipient is superfluous provided the direct matching is properly done.
4. The universal use of group IV donors is strongly advocated as a means of preventing accidents and reducing the incidence of post-transfusion reactions.
5. The blood group of an individual remains constant throughout life.
6. The negligible mortality directly attributable to blood transfusion compared with the results obtained argues well for the efficacy and safety of this form of treatment.

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THE SURGICAL TREATMENT OF HYPERINSULINISM *

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Hyperinsulinism, in cases in which insulin has not been administered, is now recognized as an entity. It represents the antithesis of diabetes, just as hyperthyroidism is the reverse of myxedema. It is characterized by a constant tendency of the level of the blood sugar to fall. This necessitates the ingestion of food or sugar at frequent intervals to prevent the occurrence of hypoglycemic symptoms. The condition was first reported by Harris,[1] who introduced the term hyperinsulinism. He observed, in several cases, a subnormal concentration of blood sugar and certain symptoms resembling those seen in diabetic patients after overdosage with insulin. Further attention has been directed to the disorder by the observation, in a number of cases, of the severest symptoms of hypoglycemia, namely, mental confusion, coma and convulsions.

A definite pathologic basis for hyperinsulinism was demonstrated through the study of a case seen at the Mayo Clinic in 1926.[2] It was found that overproduction of insulin was due to carcinoma of the pancreas originating in the islands of Langerhans. Three similar cases have since been reported. In the case described by McClenahan and Norris,[3] the tumor was benign; in the cases of Thalhimer and Murphy [4] and of Howland, Campbell, Maltby and Robinson [5] there were certain characteristics of a malignant condition. Wilder [6] reviewed the situation in 1928 and pointed out the analogy of tumor of the pancreas with hyperinsulinism to adenoma of the thyroid gland with hyperthyroidism.

*From the Divisions of Medicine and Surgery, the Mayo Clinic.
1. Harris, Seale: Hyperinsulinism and Dysinsulinism, J. A. M. A. **83**: 729-733 (Sept. 6) 1924.
2. Wilder, R. M.; Allan, F. N.; Power, M. H., and Robertson, H. E.: Carcinoma of the Islands of the Pancreas: Hyperinsulinism and Hypoglycemia, J. A. M. A. **89**: 348-355 (July 30) 1927.
3. McClenahan, W. U., and Norris, W. G.: Adenoma of Islands of Langerhans with Associated Hypoglycemia, Am. J. M. Sc. **177**: 93-97 (Jan.) 1929.
4. Thalhimer, William; and Murphy, F. D.: Carcinoma of the Islands of the Pancreas, Hyperinsulinism and Hypoglycemia, J. A. M. A. **90**: 89-91 (July 14) 1928.
5. Howland, Goldwin; Campbell, W. R.; Maltby, E. J., and Robinson, W. L.: Dysinsulinism, J. A. M. A. **93**:674-679 (Aug. 31) 1929.
6. Wilder, R. M.: Tumor der Langerhans'schen Inseln mit Hyperinsulinismus, Verhandl. d. deutsch Gesellsch. f. inn. Med., Kong. 40, pp. 223-228, 1928.

One of us [7] has reported further observations of hyperinsulinism.

Relief from hypoglycemic symptoms follows the ingestion of sugar or other food. If the symptoms are mild, they can easily be prevented or abolished by eating more liberally and more frequently. If the hypoglycemic tendency is strong, there may be difficulty in eating enough food or sugar at sufficiently short intervals. The occurrence of weak spells during the day may prevent work, and loss of sleep from the need of taking food during the night may make the situation intolerable. Serious disability results. In certain cases, death has occurred from hypoglycemia.

The fate of a patient observed by Hartmann [8] illustrated the seriousness of the condition. The patient, who was seen first in November, 1924, said: "If I do not eat every two hours, I have a spell and lose my mind." The symptoms had appeared four years previously, and progressive increase in the severity of the condition took place. It was learned later that the patient had been committed to a state institution for epileptic patients. A letter from the superintendent reported that a series of convulsions had occurred. The patient failed to recuperate from these convulsions and died of supposed epileptic exhaustion, May 9, 1926. It seems almost certain that the convulsions and death were due to hypoglycemia.

Medical measures have been of little value in controlling the disorder when severe symptoms have been present. The demonstration of the origin of hypoglycemia in a case of tumor of the pancreas aroused the hope that the situation might be remedied by surgical intervention. The possibility of curing hyperinsulinism by removal of a pancreatic tumor or resection of a part of the pancreas is suggested by the analogy of the condition to hyperthyroidism.

In the first case of hyperinsulinism seen at the Mayo Clinic, exploratory operation by W. J. Mayo revealed metastatic tumors in the liver, secondary to tumor of the pancreas. Extirpation was therefore out of the question. Resection of part of the pancreas has since been done in two cases at the Mayo Clinic. Operation in one other case has been reported by the Finneys.[9] One other patient was operated on by Holman.[10] Recently Howland, Campbell, Maltby and Robinson reported the fifth case in which resection was done. Although the total experience in the surgical treatment of hyperinsulinism is small, it is desirable to review the results at this time. Such a venturesome procedure as resection of the pancreas can be justified only when based on sound principles, when it can be carried out without undue risk, and when there is a prospect of definitely beneficial results. A study of these cases permits one to judge to what extent these requirements can be fulfilled.

The first attempt at surgical treatment was carried out by the Finneys. At operation the pancreas seemed normal in size, shape and consistency. A portion of the pancreas weighing 22.5 Gm. was resected. The microscopic appearance was normal. It was learned, through personal communication, April 30, 1929, that the patient's condition was improved. The benefit from the operation was somewhat uncertain, but the authors demonstrated the "feasibility of removal of large portions of the pancreas as a comparatively safe and simple surgical procedure."

Of the two cases in which partial resection has been performed at the Mayo Clinic, one has been reported in full and the other in part.[7] The condition of the first patient, a man, aged 52, improved after the operation. If he ate three meals regularly, it was no longer necessary for him to take sugar or food between meals and during the night. He was unable to return to work, however, for exertion was likely to cause the appearance of hypoglycemic symptoms. According to reports received at intervals, there was little change in his condition until the summer of 1929. He then began to require food occasionally between meals. Attacks of stupor occurred at night, so that he resumed the habit of taking a glass of milk at bedtime. At the latest report, received Nov. 13, 1929, the patient described his condition as being similar to that before operation. He is now obliged to eat regularly between meals and once during the night.

The second patient, a man, aged 47, was still under observation when his clinical history was reported. Various remedies had been tried. Ether anesthesia, given for ten minutes, delayed the fall in blood sugar for several hours. None of the remedies employed appeared to be of any real value. It was therefore decided to resort to operation. At the operation the pancreas appeared to be normal. A portion weighing 8 Gm. was excised. Microscopic examination did not disclose distinct changes in the islands. On the day of the operation and on the following day, solution of dextrose, 5 per cent, was given by proctoclysis. The concentration of the blood sugar was 0.103 immediately after operation. It rose gradually, reaching 0.212 sixteen hours later. Sugar then appeared in the urine. From 100 to 150 Gm. of dextrose was given each day, by rectum, and intravenously, until feeding by mouth could be commenced. The level of blood sugar fluctuated, and was not below normal until the fifth day, when the administration of dextrose was delayed until 11:30 a. m. The blood sugar fell to 0.066. From this time on, food was given three times during the day and three times during the night. It was apparent that the tendency to hypoglycemia had returned. Convalescence was satisfactory, but it was necessary to continue the regular administration of food. The condition since has been about the same as it was before the operation.

Holman's case was similar to those described. The patient was disabled because of the frequent occurrence of loss of consciousness and convulsions. At operation, the pancreas appeared to be normal. About a third of the gland was resected. The condition of the patient apparently was improved somewhat, but the hypoglycemic tendency was not abolished.

The only case in which complete relief from hypoglycemia was obtained by operation is that reported by Howland, Campbell, Maltby and Robinson. The patient was a woman, aged 52, who had been subject to attacks of loss of consciousness and convulsions since September, 1922. In 1929 the attacks became more frequent, and at this time it was noticed that, if a glass of milk or a light meal was taken at the first appearance of symptoms, the seizure might be avoided. Later this was not so successful, since the attacks might begin while the patient was sitting down to eat. It was found that the blood sugar fell to 0.04 Gm. for each 100 cc. in a typical attack. At operation, March 15, 1929, a tumor 1.5 cm. in diameter was found in the middle of the body of the pancreas. It was removed completely.

7. Allan, F. N.: Hyperinsulinism: Report of Two Cases, Arch. Int. Med. **44**: 65-70 (July) 1929.
8. Hartmann, F. L.: Hypoglycemia, M. Clin. North America **12**: 1035-1046 (Jan.) 1929.
9. Finney, J. M. T., and Finney, J. M. T., Jr.: Resection of the Pancreas, Ann. Surg. **88**: 584-592 (Sept.) 1928.
10. Holman, Emil: Personal communication to the authors.

Microscopic examination showed it to consist of masses of cells of the type found in the islands of Langerhans. It possessed certain features of a malignant growth, but there was no evidence of metastasis. After the operation, the fasting blood sugar remained normal, and hypoglycemic symptoms did not recur.

TECHNIC OF OPERATION

In the two cases observed at the Mayo Clinic in which partial resection of the pancreas was performed, ether anesthesia was used. A long, left rectus incision was made; the body of the pancreas was then readily exposed by means of a small rent made in the gastrohepatic omentum. The second patient was obese and muscular, so that it was difficult to obtain good exposure of the tail of the pancreas. It is probable that a better exposure could have been made through the T-shaped incision employed by the Finneys. An attempt to approach the pancreas through the gastrocolic omentum was unsatisfactory. In each case the pancreas appeared normal on inspection and palpation and general exploration did not reveal evidence of any pathologic condition in the liver, spleen, gallbladder or stomach. In spite of the fact that there was no gross change in the pancreas, resection was deliberately planned. The body of the pancreas was grasped with a pair of De Martel intestinal forceps and lifted away from its bed; the surrounding tissues were separated and pushed back. Several small vessels were severed in doing this, but bleeding was controlled without great difficulty. The vessels encountered in resection of the body and tail of the pancreas are largely branches from the splenic artery, which runs across the upper border. Usually these small branches can be caught with forceps before they are severed, so that the operation can be carried out with little if any bleeding. After the body of the pancreas was freed from surrounding structures, it was divided at a certain point a little distance from the head; next the outer portion was separated. The Finneys carried the dissection from the tail of the pancreas forward as far as necessary before dividing it. As it is essential to remove all the tail of the pancreas, this would seem to be a good method. Holman has suggested that it might be advantageous to remove the spleen, with the tail and body of the pancreas, in order to overcome any difficulty in controlling bleeding.

After resection of part of the pancreas, clamps were left on the remnant of the body. This seemed preferable to suturing it, as the clamps might serve as a drain, besides closing the cut surface. A pancreatic fistula developed in each case after the clamps were removed but was not considered of great consequence. In each instance the wound healed completely in a comparatively short time.

COMMENT

In the first four cases in which operation was performed, there was no anatomic change in the pancreas to account for the disturbance in insular function; yet there is strong evidence that there was excessive secretion of insulin. In any case in which this occurs, it may be dependent on a functional disturbance of the islands of Langerhans. Absence of visible change in the islets is not inconsistent with this view, for, in diabetes, loss of the functions that are dependent on insulin frequently occurs without demonstrable change in the pancreas. Considerable evidence has been accumulated to show that the nervous system has a significant influence on the secretion of insulin. It has been suggested that some cases of diabetes may be due to stimulation of inhibitory fibers in the vagus nerves. On the other hand, the experimental contributions of Britton[11] and La Barre,[12] especially, indicate that stimulation of the vagus nerve may bring about a fall in the level of the blood sugar. It was natural to suspect that overactivity of the pancreas might be due to vagal stimulation in the cases to which attention has been directed. Since atropine had no effect on the falling concentration of blood sugar, evidence cannot be brought forth to support this hypothesis. Whatever may be the fundamental cause of the disorder, it seems clear that excessive secretion of insulin is the cause of the symptoms, and it is therefore logical to attempt treatment by resection of the pancreas.

When hyperinsulinism is due to a local tumor of the pancreatic islands, one might expect complete cure to follow excision; the experience of Howland, Campbell, Maltby and Robinson confirms this opinion. It has so happened that in four of the five cases in which operation has been attempted there has not been a tumor but, presumably, overactivity of the whole gland. This naturally presents a more difficult problem. It must be admitted that the results of these operations have not been very satisfactory. One of the patients did not receive benefit. The condition of three patients was improved; in none of the cases was recovery complete, and in one case the improvement was not maintained. Yet theoretically the excision of a part of the gland should accomplish the same result as is obtained from subtotal resection of the thyroid gland for control of hyperthyroidism. The failure to obtain more satisfactory results with the operation may be due to failure to remove a sufficient amount of pancreatic tissue. Extensive resection of the pancreas is technically difficult, and it may be hard for the operator to estimate the proportion of pancreas to be excised. In each case the portion of pancreas removed seemed large but was really relatively small, probably not more than 30 per cent of the entire gland. In operations on the thyroid gland for hyperthyroidism, not less than 50 per cent of the gland must be removed to accomplish a cure, and the part left behind is often only one-fourth the size of the normal gland. More radical resection of the pancreas should give results which are comparable with those obtained in surgery of the thyroid gland.

There are certain possibilities that medical treatment may give some relief or palliation. Treatment with thyroid substance may counteract, to some extent, the overaction of insulin, since hyperthyroidism when associated with diabetes reduces the effectiveness of insulin. When ether anesthesia was used in operating, the tendency to hypoglycemia was abolished for several days or longer. A brief period of ether anesthesia alone in one case delayed the fall in blood sugar for several hours. Occasional induction of anesthesia for longer periods might give a patient with severe hyperinsulinism temporary respite. The nature of the diet may have some influence on the rate of fall of the blood sugar. These problems are all under investigation.

CONCLUSION

Hyperinsulinism is a condition which may cause serious disability, and sometimes death. When the hypoglycemic tendency is so strong that the patient is incapacitated, surgical treatment is justified. Resection of the pancreas appears to be a logical method of treat-

11. Britton, S. W.: Studies on the Conditions of Activity in Endocrine Glands: XVII. The Nervous Control of Insulin Secretion, Am. J. Physiol. **74**: 291-308 (Oct.) 1925.
12. La Barre, J.: Sur l'existence d'une insulinémie physiologique, Compt. rend. Soc. de biol. **96**: 196-198 (Jan. 28) 1927.

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ment. In one case in which hyperinsulinism was due to tumor of the islands, operation was followed by relief from hypoglycemic symptoms. In four cases in which organic change in the pancreas was not demonstrable, the results of partial pancreatectomy were not entirely satisfactory; yet the improvement observed in three cases was encouraging. Hope of control of the disorder by surgical measures, in such cases, may lie in more radical resection.

SYMPTOMS OF VAGOTONIA AND THYMIC HYPERTROPHY *

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In the practice of pediatrics one frequently encounters unorthodox symptoms of a puzzling nature, such as attacks of cyanosis, choking and coughing spells, sudden pallor, and even sudden, unexplainable death. These symptoms, which are the subject of this paper, have been variously described as being of cardiac, respiratory, abdominal, thymic or cerebral origin. They are said to occur commonly in status lymphaticus, the nature of which condition is not well established. It is my purpose in this paper to list the symptoms in a series of forty such cases seen during a period of eight years and to point out that one of the theories as to the cause of status lymphaticus seems to be in accord with a possible explanation of all these observations.

* Read before the Chicago Pediatric Society, Dec. 18, 1928.

The cases presented in the accompanying table are listed in the order of their occurrence, and none which I considered pertinent are omitted. They should be considered as a chronicle of experience rather than as a statistical study. The following few case reports illustrate the sort of experiences listed in the table:

REPORT OF CASES

CASE 5.—A boy, aged 3 years, was first seen at the Children's Memorial Hospital because of an acute hemorrhagic nephritis from which he made a complete recovery. One month after discharge he returned with acute dyspnea and stridor. Because of his serious condition, first intubation and then tracheotomy were resorted to, and antitoxin was administered. None of these afforded relief and the patient died shortly after admission. At autopsy the typical changes of status lymphaticus were the only discernible cause for death.

CASE 6.—A girl, aged 4 years, was first seen at 7 p. m. because of what appeared to be severe croup. She had slight fever and a red throat. At midnight she was again seen because of dyspnea, and at 4 a. m., when the symptoms became alarming, she was taken to the Evanston Hospital. Here antitoxin was given, and later, as the dyspnea became still worse, intubation was performed by Dr. Thomas Galloway. No relief followed this, and, as death seemed imminent, tracheotomy was attempted. With what I considered perfect exposure, it was physically impossible for Dr. Galloway to force the tube into the trachea. The child gasped and died, and immediately the tube slipped in. Antopsy was limited to the throat and revealed an enlarged thymus, no membrane on the throat or larynx, and negative cultures for Klebs-Loeffler bacilli.

It seemed here that the trachea must have been in spasm before death, and this incident awakened me to

Clinical Summary of Cases Reported *

Case			Stridor	Cyanosis	Dyspnea	Choking Attacks	Asthma	Pylorospasm	Pallor	Apnea	Laryngospasm	Rectal Spasm	Spasmodic Cough	Neck Retraction	Irregular Breathing	Cardiac Murmur	Recovery	Death	Roentgen Therapy	Large Shadow	Comment
1	B. K.	Boy	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	+	0	..	Sudden death; no postmortem
2	P. D.	Boy	+	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	Weakness
3	P. B.	Girl	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	0	..	Sudden death; postmortem
4	J. R.	Boy	..	+	..	..	..	..	..	..	..	..	..	..	..	..	+	..	+	+	Partial cyanosis
5	D. I.	Boy	+	..	+	..	..	..	..	..	+	..	..	..	..	..	..	+	0	..	Sudden death; postmortem
6	M. N.	Girl	+	+	+	..	..	..	..	..	+	..	+	..	..	..	..	+	0	..	Sudden death; postmortem
7	P. V.	Girl	+	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	+	+	
8	S. P.	Boy	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	+	..	+	
9	A. F.	Girl	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	+	..	+	Relapse in 1 year; cured
10	J. S.	Boy	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	+	..	+	Two relapses later; cured
11	R. N.	Boy	+	+	+	..	+	..	..	..	..	..	..	..	..	..	+	+	..	+	Relapse in 11 months; cured
12	N. E.	Boy	..	+	..	..	..	+	..	..	..	..	..	..	..	..	+	..	..	+	
13	D. M.	Boy	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
14	H. F.	Boy	+	..	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
15	N. H.	Girl	..	..	..	+	..	..	..	..	..	..	..	+	..	..	..	+	..	+	
16	M. O.	Boy	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	+	0	+	Atropine treatment (pylorospasm)
17	N. B.	Girl	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
18	J. R.	Boy	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	+	..	+	
19	R. J.	Boy	..	..	..	+	..	..	+	..	..	..	..	..	..	..	..	+	..	+	
20	M. M.	Girl	..	+	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
21	R. F.	Boy	..	..	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
22	S. L.	Boy	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	+	
23	R. G.	Boy	..	..	..	+	..	..	+	..	..	..	..	..	..	..	..	+	..	+	?
24	D. C.	Boy	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	+	..	+	
25	E. C.	Girl	..	..	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
26	W. M.	Boy	..	..	..	+	..	..	..	..	..	..	+	..	..	..	..	+	..	+	
27	J. W.	Boy	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	+	..	+	
28	J. W.	Boy	..	..	..	..	..	+	+	..	..	..	..	..	..	..	..	+	..	+	
29	H. M.	Girl	+	+	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
30	R. C.	Boy	..	..	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
31	R. P.	Boy	..	+	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	
32	P. W.	Girl	..	+	..	..	+	+	..	..	..	..	..	..	..	..	..	+	..	+	0
33	J. S.	Girl	..	..	..	+	..	..	+	..	..	..	..	..	..	..	..	+	..	+	0
34	B. G.	Boy	..	+	..	..	..	..	..	..	..	+	..	..	..	..	..	+	..	+	Postmortem
35	R. E.	Boy	..	+	..	..	..	?	..	..	..	..	..	..	..	..	..	+	..	+	Not definite pylorospasm
36	A. H.	Boy	..	+	..	..	..	+	..	..	..	..	..	..	..	..	..	+	..	+	0
37	W. T.	Boy	..	+	..	+	..	..	..	..	..	..	..	..	..	..	..	+	..	+	?
38	W. C.	Boy	..	+	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	?
39	R. D.	Girl	..	+	..	+	..	+	..	..	..	..	..	..	..	..	..	+	..	+	+
40	J. S.	Boy	+	+	..	+	..	+	..	..	..	..	..	..	..	..	..	?	..	+	+
			10	16	3	17	6	18	4	1	2	1	2	1	1	3	34	5	35	39	

* There were twenty-eight boys and twelve girls. Three patients with negative roentgenograms were treated successfully. One patient died after irradiation (eighteen hours). Of five patients who died, only one was treated.

the possibility that smooth muscle spasm might account for some of the symptoms in these cases.

CASE 11.—A boy, otherwise normal, had a congenital stridor. At the time of birth, roentgenograms were negative for thymic enlargement. No treatment was given, and, while the stridor was annoying, it did not increase. At 7 months the baby developed a cough with a definite expiratory wheeze and dyspnea; in other words, asthma. This was entirely different from the stridor. Roentgen examination at this time showed moderate enlargement of the thymus, and three treatments were given at periods of two weeks. The cough and signs of asthma entirely disappeared before the last treatment was given. At 18 months the wheezing and cough again appeared and the child became cyanotic on moderate exertion. This condition was allowed to continue for three months. On examination the area of cardiac dulness was slightly enlarged, and a loud systolic murmur was heard over the entire precordium. The other signs were typical of asthma. Dr. Joseph Brennemann in consultation confirmed these observations. A roentgen examination at this time was inconclusive for thymic enlargement (Dr. Hollis Potter), but, because of the previous good result, two more treatments at intervals of two weeks were given. The asthma again disappeared, and with this the cardiac enlargement, murmur and cyanosis also vanished within the month during which the treatments were given. The patient is now 4 years old and has had no further trouble.

At this time it should be emphasized that in speaking of asthma I do not refer to the "thymic asthma" of the German literature, in which all the respiratory symptoms described in these cases are included under that heading. I mean a condition with marked expiratory wheeze, indistinguishable by physical signs from ordinary bronchial asthma. In fact, in most instances I so considered these cases for weeks or months until the correct diagnosis was finally made.

CASE 30.—An apparently normal boy at the age of 2 weeks developed pylorospasm with hyperperistalsis, vomiting and restlessness after feedings. The symptoms were partially relieved by atropine and the feeding of thick cereals, but the dose of atropine had to be gradually increased until at 5 months he was taking $\frac{1}{100}$ grain (0.6 mg.) before each nursing. At about this age he began to have choking attacks with a slight cyanosis, and roentgen examination showed definite enlargement of the thymic shadow. Three treatments were given two weeks apart. The vomiting became less after the first, atropine was entirely discontinued after the third, and there have been no choking attacks or cyanosis since.

CASE 32.—A vigorous baby girl when 3 days old had three apparently causeless severe, cyanotic attacks requiring artificial respiration and the administration of oxygen. A roentgen film showed *no* increase in the substernal shadow. The next day she vomited all feedings. Breast milk, condensed milk, milk modifications, and water were equally well returned. By means of thick farina, ½ ounce (15 cc.) every hour, and large doses of atropine orally and hypodermically, she was made to gain 6 ounces (190 Gm.) in nine days. Breast milk was frequently tried but was always vomited. During this time she was seen by Dr. Joseph Brennemann and Dr. Isaac Abt. No pyloric tumor was felt at any time, but marked hyperperistaltic waves were always observed except when the stomach was ballooned up in tonic contraction. Ringer's solution was given by hypodermoclysis on two occasions. At the age of 2 weeks the infant again began to have frequent attacks, in which she would stop breathing and become cyanotic. She could usually be resuscitated quickly. After a day or two, these attacks changed in that after resuscitation respiration seemed labored and an expiratory wheeze was noted. Hypodermics of epinephrine, 2 minims (0.12 cc.) of a 1:1,000 solution, would stop the wheeze immediately, but its effect was so transitory that the injections had to be repeated often in order to keep the child alive. After two days of this existence a roentgen treatment over the thymic region was given in spite of the fact that no enlargement was apparent. This was given at 4 p. m., and during the following night all symptoms were exaggerated, the child being kept alive with difficulty by alternate hot and cold baths, epinephrine, lobeline, atropine and oxygen. At 10 a. m. the next day, 3 minims (0.18 cc.) of ephedrine hydrochloride, 3 per cent solution, was given by mouth. All symptoms disappeared within an hour. The ephedrine was discontinued after three doses at four hour intervals. Breast milk was taken and retained at 6 p. m. No more hyperperistalsis or vomiting occurred while the child was in the hospital, and the cyanotic attacks permanently disappeared. Two weeks later she became fussy after feedings, hyperperistalsis was noted, and atropine was given again with partial relief. Another roentgen treatment was given on this account three weeks after the first. In one week the atropine was again discontinued, and since then there have been no symptoms. The child is now more than a year old.

CASE 33.—A well developed baby, aged 7 months, began to have attacks in which she became extremely pale, stopped breathing, struggled and gasped. These lasted only about thirty seconds but seemed longer to the mother. A roentgen film taken soon after the attacks began showed no thymic enlargement. The seizures continued, however, until by the time she was 8 months old she had had twenty of them and the mother was frantic because they were coming oftener, once or twice a day. At this time a roentgen treatment was given over the thymic area. There have been no attacks of any kind since.

COMMENT

In looking over the list of symptoms and signs seen frequently in this group of cases, it is difficult to find any one pathologic process that can account for them all. Certainly mere mechanical pressure from an enlarged thymus does not seem adequate. Moreover, there are many reasons for doubting that mechanical pressure by the thymus is the usual cause of these symptoms. Many demonstrably large thymuses cause no symptoms, and symptoms are often produced in the absence of demonstrable enlargement. The commonly reported symptoms usually occur in attacks, whereas if pressure from enlargement of the thymus caused the symptoms one would expect to find more constant difficulty. The results obtained from radiotherapy are often too rapid to be explained by a reduction in the size of the gland. Some of the symptoms are referable to organs far removed from the neck and thorax. These objections are too serious to be waved aside entirely even in the presence of impressive evidence that irradiation of the thymus does bring relief in the majority of cases and that many cases occur in which the only demonstrable abnormality at autopsy is thymic and lymphatic hypertrophy. The possibility that enlargement of the thymus may produce pressure symptoms is not denied, but it is emphasized that mere pressure does not explain all the symptoms found in these children.

Likewise the theory that an internal secretion of the thymus causes the symptoms lacks confirmation because such secretion in human beings has not been demonstrated, and such secretion as has been found in animals has seemed to be related to the formation of lime deposits in the shell of embryos rather than to any systemic effect.

Because there is so much disagreement as to the cause of these symptoms, it seemed worth while to hunt for some one abnormality which could reasonably produce the signs. In thinking this over I could find only one adequate factor; namely, abnormal function on the part of the sympathetic nervous system. Overactivity of the vagus would explain practically all the manifestations seen in this group of cases. Spasm of the smooth muscles under vagus control could cause stridor, dyspnea, cyanosis, choking attacks, asthma, pylorospasm and enterospasm, laryngospasm, spasmodic cough, irregular breathing, and even sudden death.

An investigation into the theoretical side of the problem of status lymphaticus has recently been made by Marine,[1] who laid considerable stress on the fact that many men have ascribed the symptoms to vagotonia. Pott,[2] Escherich,[3] Griffith,[4] Wiesel [5] and others have taken this point of view.

Two of the most commonly mentioned symptoms of vagotonia are pylorospasm and bronchospasm (asthma). It is of some interest here to see what evidence there is in the literature of a connection between these manifestations and thymic hypertrophy.

PYLOROSPASM

In a review of the literature on roentgen treatment of the thymus, many instances suggestive of pylorospasm were seen. Rubin,[6] Rachford,[7] Barbour [8] and Pitfield [9] have written papers on the subject of the relationship between pylorospasm and thymic hypertrophy. In addition to these papers, many other instances were found among the case reports reviewed. Friedman [10] reported one case; Hill [11] mentioned four which were apparently of this type, and Parsons,[12] Barnett [13] and King [14] have each reported single instances. Bethea, in discussing a paper by MacRae,[15] suggested that all babies with spastic vomiting be examined for thymic enlargement. Bliss [16] says that babies with gas distention of the stomach are relieved by roentgen treatment of the thymus. To these this series adds eighteen.

There may be objection to the diagnosis of pylorospasm in some of my cases, as vomiting was not pronounced in all. The clinical picture described here in speaking of pylorospasm comprises colic without frequent or loose stools, visible peristalsis over the stomach after feedings (at which time colic is pronounced), a general muscular spasticity, and usually vomiting of the projectile type. One or two of the babies, in spite of the other conditions, seemed able to keep food down fairly well. It is conceivable that spasm at the cardiac end of the stomach may have helped them to retain food. At the beginning of this work it was not suspected that pylorospasm would develop into one of the symptoms seen in these babies. It was the frequent occurrence of this condition with the others that caused it to be included.

Roentgen therapy in all children with pylorospasm is not advocated, but it is felt that such children should be watched carefully for other signs of vagotonia, and if these are severe treatment should be given whether or not an enlarged thymus is demonstrable. Of the eighteen patients with this symptom considered here, only two were treated because of pylorospasm alone, seventeen were given irradiation and were relieved of symptoms so that atropine could be discontinued within two weeks, and the other one was given atropine alone and gradually improved over a period of months. In my experience the average child with pylorospasm in whom atropine gives complete or partial relief is not able to discontinue treatment within two weeks, and I am therefore inclined to believe that roentgen therapy is effective.

BRONCHIOSPASM

Much has been said of "thymic asthma"; in fact, the whole symptom complex has been so referred to in the literature. It is sometimes difficult to tell, therefore, in reviewing articles, whether or not true bronchial asthma is dealt with. However, many authors have apparently found expiratory wheeze and dyspnea of the true asthmatic type in patients with enlarged thymuses. Sylvester [17] reports five cases; Torrey,[18] Spohn [19] and Herrick [20] each three; Barnett,[13] Freeman [21] and Bloom [22] each two, and Morgan and Dachtler,[23] Barbour and Goin,[24] Temesvary,[25] Mulherin,[26] Waring,[27] Parsons,[12] Cook,[28] Skaggs [29] and Brooks [30] each one case.

In the five cases of asthma associated with enlargement of the thymus reported in this article, complete relief was obtained in all immediately following a course of three roentgen treatments over the thymic area. Three of the children, however, after a period of about one year, had relapses necessitating further treatment, and one has had two relapses. Each has been again relieved following irradiation and all the children are now symptom free.

It may be of interest to note in this connection that Waldbott [31] has recently reported beneficial results in bronchial asthma following irradiation over the spleen, and Wiener [32] reported favorable results in pylorospasm after irradiation of the pylorus. This may lend support to the idea that the benefit derived from irradiation in these instances may be due to a general rather than to a local action.

If these symptoms are to be considered as of vagotonic origin, two things will have to be explained: first, the connection between vagotonia and enlargement of the lymphatic system including the thymus, and, second, the reason for benefit following irradiation.

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POSSIBLE RELATIONSHIP BETWEEN VAGOTONIA AND STATUS LYMPHATICUS

In the first place it must be recalled that the vagus is a part of the parasympathetic or bulbosacral division of the autonomic system, and that its activity is normally opposed by the sympathetic division of this system. Vagotonic symptoms, theoretically, may be produced either by stimulation of the vagus or the parasympathetic or by a reduction in the activity of its normal antagonist, the sympathetic. Activity of the suprarenals has a marked effect on the autonomic system. Therefore, vagotonic symptoms might follow reduced suprarenal activity. In this connection, facts of possible significance are found. Marine [1] in his review pointed out that spontaneous involution of the cortex of the suprarenals occurs during the first two weeks of extra-uterine life. Since by suprarenalectomy Crowe and Wislocki,[33] Marine, Manley and Baumann,[34] and Jaffe [35] have in experimental animals produced a condition similar to status lymphaticus with thymic enlargement, and since status lymphaticus has been clinically associated with reduction in the suprarenal chromaffin substance by Wiesel,[5] Hedinger [36] and Warthin,[37] Marine suggests a significant relationship. He says: "Wiesel would associate this hypoplasia of the chromaffin system with the cardiovascular changes, the low blood pressure and the increased vagus tone characteristic of status lymphaticus. He would assume a close relationship between status lymphaticus and Addison's disease." And farther on, "It is probable that the spontaneous involution of the human suprarenal cortex which begins during the second week of extra-uterine life may be a causal factor in the hypertrophy of the thymus and lymph glands and the lowered resistance in infants. . . . This destructive degeneration of the suprarenal cortex apparently does not occur in animals, and it is possible that, because of this, status lymphaticus is rare in animals."

Tracy [38] thinks that death in status lymphaticus is due to a lack of the epinephrine hormone in the blood which makes adequate systole of the heart and blood vessels impossible. He states that in death caused by status lymphaticus the heart is always in diastole.

MacLean and Sullivan [39] report three deaths from status lymphaticus in which the blood sugar was extremely low, and point out that such a condition might result from imperfect suprarenal response to the various strains imposed on the body known to result in death in this condition.

There are, then, three possible causes for the production of symptoms which are referable to the suprarenals: 1. Insufficiency in epinephrine production may weaken vascular systole. 2. Because of epinephrine insufficiency, a hypoglycemic shock may be easily produced in these patients. 3. Following the suprarenal involution occurring after birth, an autonomic imbalance produces a vagotonia which causes many of the symptoms.

It is interesting also to note that, in an adult patient who died after a rather prolonged illness characterized by attacks of cyanosis and progressive weakness, Hirsch and Capps [40] were unable to find any lesion at autopsy except bilateral thrombosis of the suprarenal vein. They suggest that the cyanosis resulted from suprarenal insufficiency and cite cases reported by Crowe, Bittfor and Medlar in which cyanosis appeared.

Thus, by reasoning that the symptoms produced might be manifestations of a vagotonia, one is led to an assumption that suprarenal insufficiency is the primary cause and that the thymic and lymphatic hypertrophy are the results of this deficiency as suggested by the animal experiments already referred to. A possible relationship between thymic hypertrophy and vagotonia has, however, been established.

POSSIBLE CAUSE FOR RELIEF OF SYMPTOMS

If the conception is true that thymic hypertrophy is only a result of decreased suprarenal secretion and not of primary importance, then one would not at first glance expect relief to follow any method of treatment aimed at the thymus. Petersen suggests that irradiation over any large lymphatic structure would result in an effect antagonistic to the vagus. This he considers might result in a nonspecific protein reaction brought about by the effect of roentgen rays on lymphatic structures. He [41] has demonstrated that a nonspecific protein reaction is associated with a peripheral contraction and visceral dilatation, which, of course, would be directly antagonistic to vagotonia and which might therefore alleviate symptoms due to this cause.

His explanation is attractive because in this way one could understand why patients without demonstrable thymic hypertrophy are benefited, and also why the results are so prompt in their appearance.

The following conception is presented with the full realization that it is only a suggestion, and with the excuse that it approximates an adequate explanation of all the phenomena seen in these cases:

Since the suprarenals of the newly born baby undergo partial involution, reduced suprarenal function may result. If this reaches a sufficiently low point, vagotonia may result from an autonomic imbalance on the basis of suprarenal insufficiency. The suprarenal insufficiency may also tend to weaken vascular systole and to lessen the blood sugar response to unusual demands, and it may lead to hypertrophy of the lymphatic structures including the thymus, thus producing the signs and symptoms of status lymphaticus. Relief results from a nonspecific protein reaction following roentgen-ray or radium exposures over lymphatic structures.

The proof of such an hypothesis depends on its confirmation by experimental work. Its clinical application, however, has explained many inexplicable experiences.

SUMMARY

Most of the symptoms exhibited by forty patients who were of interest from the standpoint of status lymphaticus can be explained on the basis of spasm of the smooth muscles under vagus control.

It is considered possible that the suprarenal involution that occurs in the newly born may result in both vagotonia and thymic hypertrophy, presenting the symptom complex here described.

In this series irradiation over the thymus appeared effective in relieving symptoms, whether or not the gland itself was demonstrably enlarged.

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PREVENTION OF DEFORMITIES IN CHRONIC ARTHRITIS

II. THE SPINE AND THE HEAD

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Deformities that limit the motion of the spine and hold it in unnatural positions, particularly in the thoracic spine, are far more serious for the general health of the patient than are deformities occurring in the extremities. When the spine is stiffened by arthritis, proper functioning of the thoracic and abdominal viscera is not possible,[1] because the position such patients habitually assume is one of forward flexion of the spine. The chest becomes flattened, and the ribs droop and gradually are fixed with the chest in the position of expiration (fig. 1). Normally there

Fig. 1.—Appearance of chest in early arthritis of the spine showing marked sagging of the ribs, heart and diaphragm.

is a moderate excursion of the chest in ordinary respiration, with about 1½ to 2 inches increase in chest circumference. In arthritis of the dorsal spine there is often no measurable expansion of the chest in respiration. Usually the costal angle is 70 degrees or less, and there is often no palpable space between the lower ribs and the iliac crest.

Fluoroscopic tracings of the diaphragm (fig. 2) of such persons show the diaphragm frequently at the eleventh or twelfth rib with very little excursion even on forced respiration. The flat, immobile chest and the forward-flexed neck, with the consequent relaxation of the suspensory ligament and mediastinal attachments of the diaphragm, are the more obvious causes of this depression and decrease in the excursion of the diaphragm. In many of these individuals there is a constant rapid pulse. Roentgenologic studies of the gastro-intestinal tract in these cases show a ptosis of the viscera, particularly the stomach and large bowel, with marked retardation in the intestinal elimination. Associated with this as a rule is a protruding, atonic abdominal wall. These and their evident sequelae are the serious secondary features which appear when arthritis stiffens the deformed spine in a forward position.

Arthritis of the spine was first carefully studied because of its neurologic manifestations.[2] Often the earliest symptom is a vague, apparently inexplicable pain in some part of the body,[3] and proper therapy is delayed because the spine is not suspected as a cause

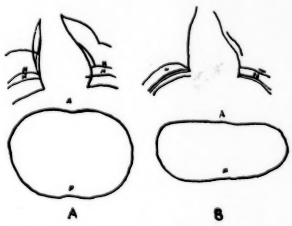

Fig. 2.—*A*, fluoroscopic tracings of the diaphragm of a normal, well developed individual; *B*, diaphragmatic tracings in a moderately advanced case of spinal arthritis.

of the pain. This pain is radiating in character and may be present on one or both sides, depending on the extent of the arthritic lesion. In rarer instances a slight atrophy of musculature in the upper and lower limb has been the first visible evidence of an arthritis of the cervical or lumbar spine. Paresthesias occur not infrequently in the nerve distribution of the spinal roots from the involved area in the spine. Any part of the spine may be involved, and various areas may be affected at the same time. Of course, those regions of the vertebral column subject to strain are far more likely to become involved, whether this strain is sudden trauma, occupation, or the chronic irritation of faulty posture.

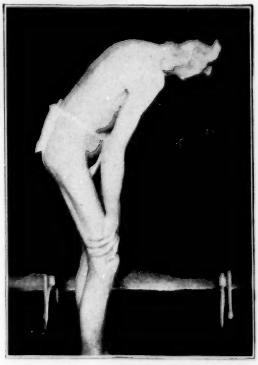

Fig. 3.—Spine ankylosed in flexion in advanced case of arthritis of the spine.

In most cases the second symptom to appear, sometimes the first, is stiffness with associated pain on motion.[4] This may be a stiffness appearing only in the morning and wearing off as the patient engages in the day's activities, reappearing again after a period of rest and quiet. Because of the stiffness and pain on motion, the patient gradually comes to assume a position in which flexion is facilitated and pain is lessened. This, in most cases, is a forward bowing of the dorsal spine or of the entire spine.

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4. Winemiller, Z. H.: U. S. Vet. Bur. M. Bull. **2**: 1064 (Nov.) 1926.

Gradually the ability to stand erect is lost [5] and the individual goes about unable to look up or turn about without moving the entire body (fig. 3), a figure more pathetic than a Quasimodo. More rarely stiffness of the spine occurs in a position approaching full extension with inability to reach the floor without bending the knees. Still more rarely a fixed postural scoliosis occurs.[6]

Fig. 4.—Tired posture, a predisposing cause of deformity in spinal arthritis.

These are the common early symptoms of spinal arthritis. When tenderness, deformity and marked pain appear, much valuable time has been lost. The insidious onset of fixed deformity needs especial emphasis. Only by constant vigilance on the part of the physician can it be prevented.[7] When these symptoms appear, the entire spine should be examined with the clothing off. The motion of the spine should be tested and the musculature palpated on either side of the spinous processes for protective muscle spasm. Roentgenologic examination of the spine should be done, but this will often show little in early cases—just an increased haziness about the articular facets. The posture of the patient should be observed from the side to see that he does not have postural strain, which will make him a likely candidate for arthritis if he does not already have it (fig. 4).

When spinal arthritis has been found or is strongly suspected, the most effective measure at our command for preventing deformities is rest in correct positions.[8]

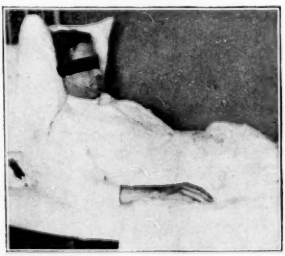

Fig. 5.—Bad position assumed in bed, with flat chest and flexed spine.

This means complete rest in bed, for a matter of weeks. Any extensive experience with this disease makes it evident that no patient can become cured of the malady and continue at his work at the same time. Recumbency is indicated to afford rest to the patient, to give an opportunity to raise his resistance, to allay pain and muscle spasm and, above all, to prevent the forward deformity. This recumbent rest must be so arranged that positions are not assumed which induce the spinal and thoracic deformity described (fig. 5). The patient's bed should not sag in the middle; there should be but one small pillow under the head; often no pillow is better. It is less fatiguing and less likely to cause deformity to have the patient sit in a straight-backed chair than to have him bolstered up in bed with its certain flexion of the dorsal spine. At intervals of about one-half hour several times during the day a pillow should be placed under the dorsal spine and the hands should be placed under the head (fig. 6). This pulls the thoracic cage into the fullest possible expansion.

When deformity has already occurred, complete recumbency for a period of weeks is required.[9] Heat applied to the spine in any form gives comfort and decreases muscle spasm. The patient is placed in a hyperextended position at short intervals during the day to mobilize the spine, to increase chest expansion and later to correct deformity. The patient is first taught to lie with a pillow under the knees to flatten the lumbar spine. No pillow is permitted under the head at these times, thus making for full extension of the cervical and dorsal spine. When this becomes comfortable, a pillow is placed under the back at the apex of the bowing for short periods; later this may be replaced by a sand bag or half shell plaster cast, in which the patient may lie for short periods or even all night. A more vigorous measure is to have the patient lie on a firm hair mattress, which is gradually raised by means of inch boards placed from day to day under the apex of the deforming spinal curve. Not all deformities yield readily to such treatment but all will improve to an encouraging degree; sometimes, however, only after months of persistent treatment. When such therapy cannot be followed and stiffness increases, the spine should be allowed to ankylose only in the best functional position: with the chest in full expansion and the spine in full extension with no increase in the normal curves.[10]

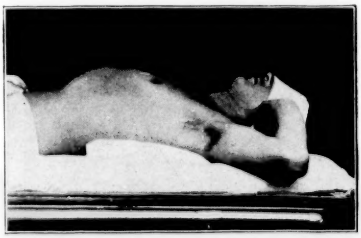

Fig. 6.—Position assumed to prevent deformity and to increase chest expansion.

Exercises play an important part in the treatment of spinal arthritis. These are given several times daily in the recumbent position. As the patient becomes more comfortable and stronger, he is given sitting or standing exercises. They should be designed to mobilize the stiffened spine, to improve chest expansion, and to strengthen the atonic abdominal wall and the weakened spinal muscles. These exercises should be continued until the patient is well.

5. Heinemann-Grüder, H.: Arch. f. klin. Chir. **145**: 527, 1927.
6. Schanz, A.: Arch. f. klin. Chir. **139**: 627, 1926.
7. Todd, A. H.: Lancet **1**: 515 (March 18) 1922.
8. Swaim, L. T.: J. Advanc. Therap., May, 1915.
9. Davis, A. G.: Atlantic M. J. **29**: 369 (March) 1926.
10. Schrock, R. D.: M. Clin. of North America **12**: 521 (Sept.) 1928.

With the disappearance of muscle spasm and improvement in spinal and abdominal musculature, the patient may again become ambulatory. At this stage the patient should be provided with apparatus which will help prevent deformity and yet not restrict the chest. This apparatus should be a back brace fitting to the pelvis snugly, supporting the lower part of the back with very little lordosis, and extending to about the lower angle of the scapula. It should be attached to an anterior pad holding up the lower part of the abdomen (fig. 7). When there is much tendency to a forward stoop in the upper dorsal spine, elastic shoulder straps attached to the brace will be more comfortable, less clumsy and as effective as a long brace of the Taylor type. Tight fitting jackets of leather or plaster may be necessary for forced correction but are not used for long periods as they interfere with rib motion.

HEAD

Torticollis, a rotation of the head due to cervical arthritis, is one of the most unsightly as well as obstinate deformities that involve the head (fig. 8). Often, in early arthritis of the cervical spine, muscle spasm of one side of the neck occurs. This will cause the head to be rotated or flexed toward the side with the stronger muscle pull. The patient will habitually take such a position because it is more comfortable. Soon adaptive shortening of muscles occurs, followed by stiffness and finally ankylosis of the cervical spine in the deformed position.

When the head is pulled to one side by such protective muscle spasm, it should be put at complete rest with the neck in the normal erect position and the face looking straight forward. This position should be held by a posterior plaster shell or sand bags. Heat applied to the back of the neck and traction of from 3 to 10 pounds (1.4 to 4.5 Kg.) on a head sling often help relieve the muscle spasm. As the muscle spasm decreases, the position of the head should be changed several times a day and held by pillows or sandbags if necessary. If stiffness increases in spite of treatment, the neck should be permitted to become stiff only in a good position, with the head facing directly forward and balanced well on the torso for the upright position. This not only gives no noticeable deformity but also is the most usable position.

Fig. 7.—Back brace fitted with elastic shoulder braces.

Involvement of the temporomandibular joints occurs in a large number of arthritic cases. It most often produces a moderate limitation of motion on one or both sides. In the acute stages a many-tailed jaw bandage is helpful. At the same time the patient should have a diet that necessitates little mastication. When the soreness has passed, the ordinary use of the joint in the chewing of food will usually prevent further limitation of motion. A certain amount of correction can be secured by the use of soft wood wedges between the upper and lower teeth.[11] Various operative procedures have been devised for securing motion when the joint is ankylosed.[12] Associated with limitation of motion in the temporomandibular joint, but sometimes occurring independently, is a malocclusion of the teeth due to the changes in the maxillary joint. Its prevention is treatment of the joint with rest in the acute stages. The malocclusion is a dental problem.

Fig. 8.—Rotation of head from arthritis of the cervical spine.

372 Marlborough Street.

POSTINFLUENZAL ANGINA PECTORIS*

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No postinfluenzal involvement of the cardiovascular system is more serious than that of angina pectoris. In the 412 cases of acute influenza studied by the Influenza Committee of the Witkin Foundation in the four year period from September, 1925, to September, 1929, nine cases of angina pectoris were discovered. While the relative incidence of postinfluenzal angina pectoris was only 2 per cent in this series of cases, the absolute number occurring in the community must be great; the widespread prevalence of influenza in both endemic and epidemic form must leave in its wake inestimable numbers who later may succumb to this dreadful malady.

Postinfluenzal angina pectoris is not a new disease although the literature records few studies of the rôle played by the influenzal infections in the dramatic establishment of this condition. Sansom[1] was apparently the first to call attention to that group of cases now classified as postinfluenzal angina pectoris. No improvement can be made in Sansom's original comment written more than thirty-seven years ago, in 1892:

> I have observed [he says] a considerable number of cases in which, after an attack of influenza, pain has been referred very closely to the region of the heart. In a few cases, the pain was persistent, but in most, paroxysmal. The pain may be

11. Rainey, W. R.: J. Missouri M. A. **20**: 271 (Aug.) 1923.
12. Baer, W. S.: Am. J. Orthop. Surg. **16**: 1 (Jan.) 1918.

* From the Witkin Foundation for the Study and Prevention of Heart Disease, Beth David Hospital.

1. Sansom, A. E.: The Diagnosis of Diseases of the Heart and Thoracic Aorta, Philadelphia, 1892, p. 9.

dull, limited to the heart region, but . . . in others it may be diffuse . . . accompanied by a tingling down the left arm. Occasionally there may be attacks of dyspnea occurring independently of exertion.

Of the older authors, Gibson [2] is the most positive in his declarations that influenza must be considered as one of the important etiologic factors responsible for the development of angina pectoris. Vaquez,[3] in 1924, and recently Brooks [4] have clearly demonstrated the part played by the acute infectious diseases and especially influenza in the development of angina pectoris.

The injury sustained by the entire cardiovascular system following the influenzal infections has been the subject of close scrutiny by many observers throughout the world. Recently Hubert,[5] Hamburger,[6] Swift,[7] Burnett and Piltz,[8] and Parsonnet [9] have contributed extensively to the literature on this problem. My own investigations have shown that heart block,[10] irremediable myocardial injury [11] and pathologic bradycardia [12] are frequent sequelae found in the convalescence from the acute influenzal infections.

In the series of cases presented here, angina pectoris developed in nine individuals who, prior to the influenzal attack, had not had this condition. A collective study of these cases is presented in the accompanying tabulation. It will be noted immediately that all of the patients who developed angina pectoris were in the middle age period; the youngest was 41 and the oldest 61, but the average age incidence was 51 years. In this group there were three women and six men. The duration of the acute influenzal attack lasted from two to six days, with a general average of about three and one-half days. The interval elapsing between the end of the acute influenzal infection and the onset of the first anginal attack ranged from ten to thirty-four days, the average here being about seventeen and one-half days. It is interesting to note that there apparently was no relation between the duration and severity of the original influenzal infection and the time of the onset of the first anginal attack and its subsequent outcome. For example, in case 2 the original attack lasted only two days, the first anginal attack occurring on the fourteenth day, and this patient subsequently improved, while in the ninth case the original attack lasted only two days but the onset of the first anginal attack developed on the eighteenth day, the patient dying during the first attack. In both cases there was no previous history of any cardiovascular disorder, and on physical examination, with the exception of certain electrocardiographic changes, there were no signs of cardiac disease.

Collective Study of the Clinical Details in Nine Cases of Postinfluenzal Angina Pectoris

Case	Sex*	Age	Previous Cardiovascular History	Duration of Influenzal Attack, Days	Onset of First Anginal Attack, Days	Physical Examination	Electrocardiographic Studies	Outcome	Comment
1	♂	56	High blood pressure Heart +†	5	17	Heart ++ BP 80/60	P-R 0.32 second; T_1 ‡ Right bundle branch block	Death	Died in second attack of angina
2	♂	48	Negative	2	14	Negative	P-R 0.20 seconds LVP +	Improved	Eight attacks; none after third month
3	♂	61	Negative	5	34	Negative	T_1 and T_2 ‡ LVP +	Unimproved	Attacks still occurring
4	♀	58	High blood pressure Heart +++	3	10	BP 240/145 Heart +++ Aorta ++	T_1, T_2, and T_3 ‡ LVP ++	Death	Died in sixth attack
5	♀	47	Negative	4	15	Negative	Normal (?) LVP	Improved	Four attacks; none after second week
6	♂	53	Aortitis	3	14	Heart + Aorta +++	LVP +++	Improved	Sixteen attacks; none after fifth month
7	♂	49	Negative	6	12	Heart + BP 90/45	Normal	Unimproved	Attacks still occurring
8	♀	41	(?) High blood pressure	3	24	Heart ++ Fibrillating	Auricular Fibrillation; right bundle branch block; extrasystole	Improved	Two attacks; none after first week
9	♂	52	Negative	2	18	Negative	P-R 0.28 seconds LVP	Death	Died in first attack

* In this column ♂ indicates male; ♀, female.
† The plus sign (+) indicates enlargement.
‡ Inverted or altered.

Of the nine patients three died, one in the first attack, one in the second attack, and one in the sixth attack. The first two deaths occurred in a man and a woman with previous histories of cardiovascular disease. These cases are reported here in detail. Five of the nine patients had no previous cardiovascular history; a sixth had a questionable history of high blood pressure a few years before.

Electrocardiographic studies were made in each case, and in all but one case specific abnormalities were found. In general, these abnormalities agreed substantially with the physical examination, and certain prognostic comments made at the time of the electrocardiographic study were subsequently borne out by the outcome of each case. A brief summary of the most interesting cases follows:

REPORT OF CASES

CASE 1.—A man with a long-standing history of hypertension had an attack of influenza which lasted for five days, during which time he was prostrated. He made a quick recovery but on the seventeenth day was seized with a characteristic anginal attack while riding in an automobile. Physical examination

2. Gibson, G. A.: Disease of the Heart and Aorta, London, 1892, p. 764.
3. Vaquez, Henri: Diseases of the Heart, Philadelphia, W. B. Saunders Company, 1924, p. 420.
4. Brooks, Harlow: Angina Pectoris, New York, Harper & Brothers, 1929, p. 41.
5. Hubert, George: Ueber Grippeschäden am Kreislaufapparat, München. med. Wchnschr. **75:** 1202-1204 (July 13) 1928.
6. Hamburger, W. W.: Involvement of Auricle and Conduction Pathways of Heart Following Influenza, Am. J. M. Sc. **160:** 479 (Oct.) 1920.
7. Swift, H. F.: The Heart in Infection, Am. Heart J. **3:** 629-648 (Aug.) 1928.
8. Burnett, C. T., and Piltz, G. F.: The Electrocardiogram in the Acute Infections, J. A. M. A. **93:** 1120 (Oct. 12) 1929.
9. Parsonnet, A. E.: Sino-Auricular Block Following Acute Influenza, to be published.
10. Hyman, A. S.: Postinfluenzal Heart Block, M. J. & Rec. **124:** 698-703 (Dec. 1) 1926.
11. Hyman, A. S.: Postinfluenzal Disturbances of the Heart, New York State J. Med. **26:** 1022 (Dec. 15) 1926.
12. Hyman, A. S.: Postinfluenzal Bradycardia, Arch. Int. Med. **40:** 120 (July) 1927.

revealed that the heart was much enlarged but the blood pressure low. The electrocardiographic studies (fig. 1) showed a right bundle branch block with T wave changes in the first lead. There was also a moderate delay in the P-R interval. The patient was put to bed and was given routine dextrose and

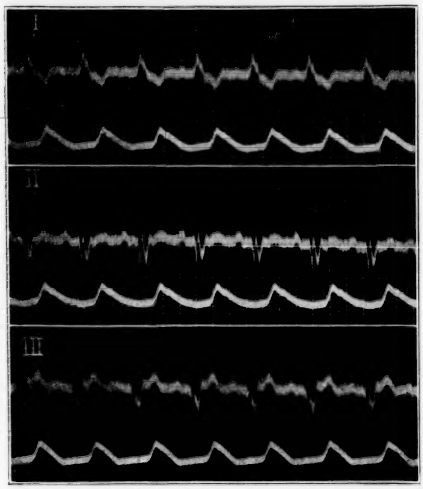

Fig. 1.—Right bundle branch block with delay in the P-R interval to about 0.22 second. The T wave in the first lead is inverted. Simultaneous polygraphic tracings of the radial pulse were taken with each of the three leads; it is normal here, but occasionally in this condition pulsus alternans may be discovered.

theophylline ethylenediamine therapy in the manner already described.[13] On the fifth day following the first attack, which was twenty-two days after the onset of the original influenzal infection, he suffered a terrific paroxysm of substernal pain and died in about one hour.

CASE 5.—In a woman, also with a long history of hypertension, the original attack of influenza was very mild, lasting only three days, but on the tenth day of her convalescence she had an anginal seizure while sitting quietly in a chair. The blood pressure at this time was 240 systolic and 145 diastolic. Both the heart and the aorta were tremendously enlarged. Electrocardiographic studies showed alterations of the T waves in all leads, with a definite left axial deviation of the heart (fig. 2). The attacks recurred in spite of all therapy and became more frequent at the end of the fifteenth day. The sixth and final attack occurred while the patient was in bed, with sudden death supervening.

CASE 8.—A woman, the youngest patient in this series, was told that she had a high blood pressure a few years before her attack of influenza, which lasted three days and was unusually severe. On the twenty-fourth day of her convalescence, while walking in the street, she was seized with a severe viselike pain in the chest. This pain radiated to the back, left axilla and left shoulder. There was no dyspnea. On physical examination fibrillation was found; the heart was somewhat enlarged, and electrocardiographic studies (fig. 3) showed auricular fibrillation with a marked right bundle branch block, the Q-R-S complexes being delayed to about 0.16 second. There were also frequent extrasystoles, which because of their prematurity at times caused the pulse rate to be as slow as 36 beats a minute. This is beautifully demonstrated in lead III, where simultaneous polygraphic tracings of both the radial and the tibial pulsations were taken with the electrocardiographic tracing. The patient had two attacks and then slightly improved, returning to her usual activities as a housewife.

CASE 9.—A man, with no previous cardiovascular history, had a brief attack of acute influenza, remaining in bed for one day. On the thirteenth day of his convalescence he complained of dyspnea and palpitation on the slightest exertion. A physical examination at that time was essentially negative. Electrocardiographic studies (fig. 4) showed a marked prolongation of the P-R interval; the records were otherwise normal. The patient was a man of affairs and refused to remain inactive after the sixteenth day. On the eighteenth day he suffered a terrific anginal seizure while climbing the stairs in his home and died in about one hour.

COMMENT

Postinfluenzal angina pectoris is apparently confined to the middle age periods. When there has been a previous history of cardiovascular disease, its development seems to have a more serious outcome than in those patients who have previously been normal. This, however, is not always true; patient 9, for example, was a man of 52, with no previous heart disease. Even during his convalescence, no definite cardiovascular changes were noted. The delayed conduction time in the electrocardiogram was the only clue presented in this case that injury had been sustained by the heart. It has previously been pointed out that this finding may indeed be the only one seen in cases in which serious heart disease subsequently develops.[14] Apparently no relationship exists between the duration of the influenzal attack and the time of the onset or the character of the anginal seizures.

The electrocardiograph provides the only method of determining the extent and the severity of the myocardial change. Most of these cases, six out of nine, showed definite alterations in the electrocardiogram which were suggestive of severe cardiovascular disease. No attempt is made here to indicate the treatment for this condition, save to point out that postinfluenzal carditis is unquestionably associated with poor nutritional balance of the heart. The intravenous administration of dextrose alone or in conjunction with such coronary dilators as theophylline ethylenediamine preparations or theobromine calcium salicylate may do much to relieve the condition and prevent subsequent anginal attacks.

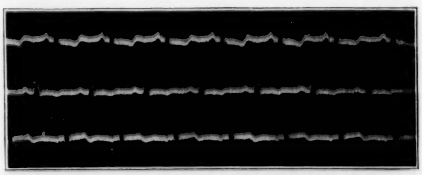

Fig. 2.—T wave alteration in all three leads, with a marked left axial deviation of the heart.

In the light of the extensive studies which have been made in regard to influenza and especially in regard to the cardiovascular changes which take place as a result of the influenzal infections, the occurrence of this acute infection in any of its various manifestations must be regarded as of greater significance than a mere upper respiratory tract infection. While extensive injury has

13. Hyman, A. S.: The Intravenous Administration of Dextrose in Coronary Artery Disease, to be published.

14. Parsonnet, A. E., and Hyman, A. S.: Applied Electrocardiography, New York, Macmillan Company, 1929, p. 175.

been frequently noted in the hearts of young persons who have suffered acute influenzal attacks, most of these changes show apparent recovery. The delayed P-R interval in the electrocardiogram, which is the most common abnormality found in such cases, may require a prolonged convalescence; but with few exceptions the symptoms apparently clear up entirely.

Acute influenzal infection in the adult in middle life must, on the other hand, be regarded as more than a passing winter upset. The symptoms of the attack may indeed be very mild, but when the cardiovascular system is beginning to show or has shown signs of degenerative change, such additional cardiac injury may lead to irremediable or even fatal disease of the heart. Angina pectoris as a result of infectious carditis is not uncommon, but it apparently is neither as severe nor as frequent as postinfluenzal angina pectoris.

Clinicians would do well, therefore, to view the acute influenzal infections of middle age as of some significance and, if cardiovascular changes are noted, the period of convalescence should be prolonged until the heart has an opportunity to recover. The development of angina pectoris in these cases may not be infrequent and, if suggested by electrocardiographic studies prior to the actual onset of the symptoms, expectant treatment should be immediately employed.

SUMMARY

1. Of 412 patients with acute influenzal infection, nine developed angina pectoris, although they had never had symptoms of this disease before.

2. All the patients were in the middle age period.

3. Electrocardiographic studies showed the presence of severe myocardial injury in most of these cases.

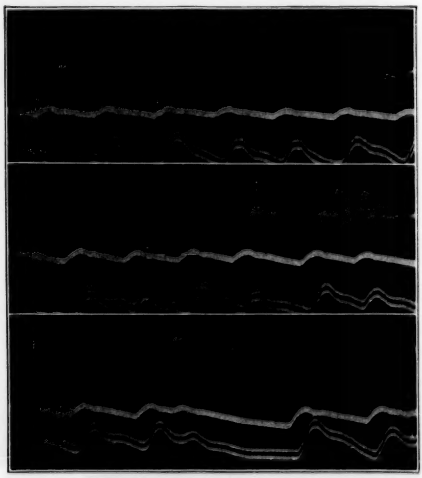

Fig. 3.—Auricular fibrillation with right bundle branch block. Simultaneous polygraphic tracings of the radial and tibial arteries have been taken with each of the three leads. In the third lead there is a period of nearly two seconds in which no pulsation reaches the peripheral circulation.

4. Three patients died, two with extensive myocardial injury, but the third had apparently a good cardiovascular system.

5. There was no relation between the severity of the original influenzal attack and the time of the onset of the first anginal seizure nor was there any relation between the time of the seizure and the immediate outcome.

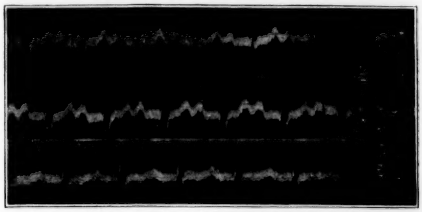

Fig. 4.—Marked prolongation of the P-R interval to about 0.22 second. There is no axial deviation of the heart in this case.

6. Postinfluenzal angina pectoris must be considered as a not uncommon sequela in the convalescence from influenzal infections occurring in the middle aged.

1235 Park Avenue.

ARTERIAL EMBOLISM AND EMBOLECTOMY

REPORT OF CASES *

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AND
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An embolus occluding one of the main arterial stems of the extremities is an uncommon occurrence. Bull [1] demonstrated embolism of the extremities fifteen times in 6,140 postmortem examinations. Such an accident frequently results in gangrene of the affected limb, and amputation becomes necessary. With the development of vascular surgery, operative removal of obstructing emboli naturally was tried. The first attempt was made by Ssabanejew [2] in 1895 but was unsuccessful. Following him several other surgeons performed arteriotomy for the removal of emboli, but none of these succeeded in reestablishing the circulation. In 1911 Labey [2] of France performed the first successful embolectomy and in the following year Key [3] performed the second successful one. Mainly as a result of the work of Key, this operation has had great vogue and success in Sweden. Up to the latter part of 1928, Petitpierre [4] collected 118 reports of embolectomy from the literature and estimated that about 200 embolectomies had been done. More than half the operations have been done by Swedish surgeons. Key [5] had collected ninety-five reports from Sweden by the end of 1925. Since then several more have been reported from Sweden. This phase of vascular surgery has

* From the Fourth Medical and Fifth Surgical Services of the Boston City Hospital.

1. Bull, P.: What Can More Than Six Thousand Postmortem Examinations Teach Us About Emboli and Embolic Gangrene of the Extremities, Acta chir. Scandinav. **54**: 315, 1922.

2. Quoted by Key (footnote 3).

3. Key, E.: Ueber Embolectomie als Behandlungsmethode bei embolischen Zirculationsstörungen der Extremitäten, Acta chir. Scandinav. **54**: 339, 1922.

4. Petitpierre, M.: Ueber Embolektomie der Extremitätenarterien, Deutsche Ztschr. f. Chir. **210**: 184, 1928.

5. Key, E.: L'embolectomie dans les troubles emboliques des extrémités, Lyon chir. **25**: 269 (May-June) 1928.

not received its merited attention in other European countries and in America. We therefore believe that it is of some value to report six cases of embolism of the extremities, in five of which embolectomy was done. Case 2 [6] occurred at the Massachusetts General Hospital and we are indebted to Dr. E. D. Churchill for permission to include it in this report.

REPORT OF CASES

CASE 1.—M. W., a woman, aged 57, married, Irish, a housewife, entered the hospital, June 26, 1923, as the result of a fainting spell. Previously she had been in good health. About three weeks before entry she suddenly fell to the floor "in a faint," and on recovering consciousness in five minutes she was unable to speak correctly. She apparently understood everything but chose the wrong words. There was no history of paralysis or of myocardial weakness.

The patient was obese. On examination she was lying flat and was in no respiratory distress. The heart was enlarged to the left; the sounds were rapid and absolutely irregular. A systolic thrill was felt at the apex and a loud systolic murmur was heard over the precordium. The peripheral vessels were slightly thickened and there was a pulse deficit of 70. The extremities and reflexes appeared normal.

The urine showed a trace of albumin, many white blood cells, and numerous hyaline and granular casts. The leukocyte count was 12,000 cells per cubic millimeter and the blood Wassermann reaction was doubtfully positive.

The diagnosis on admission was chronic myocarditis, mitral regurgitation and auricular fibrillation. With digitalis therapy there was a definite slowing of the apex rate and a decrease of the pulse deficit. Five days after entry, the patient awoke with severe pain in both legs, which also became cold and numb. Examination showed both legs to be cold, cyanotic, insensitive and motionless. The pulsation of the dorsalis pedis, popliteal and femoral arteries of each leg could not be detected. It seemed probable that an embolus had lodged at the bifurcation of the aorta. Since permission for operation could not be obtained, the patient was given morphine to control the pain, and the legs were elevated and covered with heaters. The following day, the patient continued to complain of severe pain in both legs. The legs became increasingly cyanotic, the cyanosis extending as high as the symphysis pubis anteriorly and well up on the buttocks laterally. Consent for operation was finally obtained and it was done about forty hours after the onset of symptoms.

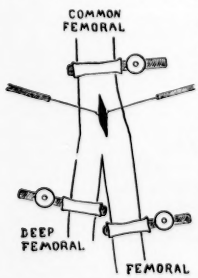

Fig. 1.—Method of exposing and clamping common femoral artery for removal of embolus.

Under light ether-oxygen anesthesia, a laparotomy was performed by Dr. I. J. Walker. The abdominal contents were walled off with gauze, and the bifurcation of the abdominal aorta was exposed. There was slight pulsation in both common iliac arteries, but it could not be determined whether or not it was only a transmitted pulsation. The abdominal aorta was clamped with Crile clamps about 2 inches above the bifurcation and both iliac arteries were clamped about 2 inches below the bifurcation. A small incision in the terminal portion of the aorta revealed a blood clot which extended into both iliac arteries. It measured about 1.5 cm. and was removed. Two smaller pieces of clotted blood were milked up from the common iliac arteries and removed. The incision in the aorta was closed by a double layer of interrupted fine silk sutures and the clamps were removed. Before the abdomen was closed there were pulsations in the aorta and its terminal divisions.

Following the operation the cyanosis and coldness of the legs decreased rapidly but there was no return of arterial pulsation. A few hours later the patient's temperature began to rise, the left arm became cold, cyanotic and pulseless, and the patient became semicomatose. She died the day after the operation.

This patient was operated on at a time when American physicians were not yet familiar with the work of Key. The method which he employs in embolism at the bifurcation of the aorta is more rapid, produces less shock, and can be performed under local anesthesia. He attempts to dislodge the embolus by means of a blunt curet introduced through an opening in one of the common femoral arteries, taking the precaution, however, of exposing and clamping the other femoral artery in order that loosened fragments of the embolus may be arrested at this point and subsequently removed.

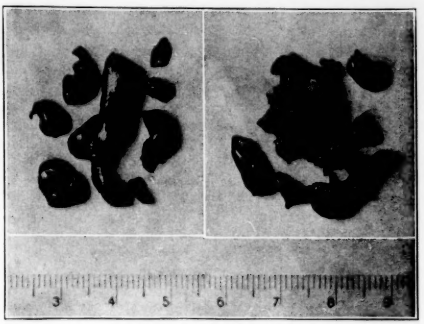

Fig. 2.—Thrombi removed from patient 2.

CASE 2.—M. G. H., an Italian housewife, aged 38, entered the hospital, June 4, 1924, because of a seizure of sharp pain in the left arm that morning. In fifteen minutes she had had similar pain in the left leg and three hours later equally severe pain in the right leg. She was unable to move either leg. Her physician gave her morphine, which eased the pain.

The patient had had chorea when 7 years old, measles and typhoid at the age of 13, and "rheumatism" at 16. She had had sore throat occasionally. She had had attacks of "rheumatism" on several occasions after her first attack. In recent years she had gradually developed symptoms of myocardial failure. Ten years before admission she had been seen in the outpatient department, where examination showed an enlarged heart, auricular fibrillation, and a strongly positive blood Wassermann reaction. After antisyphilitic treatment the latter became negative. She had an attack of transient diplopia and of right sided paresis twenty and seventeen years before, respectively. About three years before admission she had experienced undoubted cardiac decompensation and auricular fibrillation.

On examination the patient appeared obese, weighing about 200 pounds (90 Kg.), uncomfortable, breathing with difficulty, and unable to move either leg. The skin was moist, clammy and cyanotic. Percussion of the heart borders was unsatisfactory because of obesity. The heart action was absolutely irregular and the sounds were of poor quality. There were no murmurs. The blood pressure was 165 systolic and 80 diastolic. Approximately 8 inches below the inguinal ligament on each thigh was a line of demarcation separating the area of normal circulation above from the remainder of the extremities. The legs below this line were cyanotic and in places mottled with irregular livid spots. They were cold to the touch and presented complete loss of sensation. A pin prick in either foot was not felt by the patient and was not followed by any bleeding. There was complete loss of motor power and of tendon reflexes. Pulsation was felt in both femoral arteries but there was no pulsation in either popliteal or in the dorsalis pedis artery.

6. This case is discussed more fully in the Cabot Case Records, Boston M. & S. J. **191**: 995, 1924.

The white blood cell count was 19,500 per cubic millimeter, with 80 per cent polymorphonuclears. The blood Wassermann reaction was negative.

A diagnosis of bilateral embolism of the femoral arteries was made and embolectomy was advised. The left leg was operated on sixteen hours and the right leg thirteen hours after the onset of symptoms.

Under procaine hydrochloride anesthesia a 4 inch vertical incision in the left groin was made by Dr. E. D. Churchill, and the femoral artery was exposed for a space of 1½ inches above and below the origin of the profunda femoris. There was slight bulging of the artery at the region of its branching, and below this the caliber of the artery seemed diminished. At the site of obstruction there was a downward thrust of the artery but no expansile pulsation. A Crile clamp was placed on the common femoral artery at the top of the incision and the artery was opened by an incision half an inch in length (fig. 1). The lumen was filled by a dark red blood clot, which was extruded by gently milking it upward from the femoral and then from the profunda artery. A steady ooze from the distal ends, due to the collateral circulation, indicated that the thrombus had been removed. The clot broke in fragments during the removal and small pieces were extracted with fine forceps and a curet dipped in oil (fig. 2). Crile clamps were placed on the peripheral end of the femoral artery and on the profunda branch, thus stopping the hemorrhage from the collateral circulation. The clamp on the proximal end of the artery was released, allowing a brisk, spurting flow of blood. This flushed out a few small blood clots, probably thrombi which had formed centrad to the embolus. The clamp was replaced and the artery wall sutured with fine silk treated with petrolatum, bringing intima to intima with a running over-and-over stitch. Further stitches were placed in the outer coats of the artery and the clamps removed. There was definite expansile pulsation in the femoral artery and in its profunda branch as far down as could be reached in the wound. An observer reported pulsation of the popliteal artery, and the leg became warm down to a point below the knee in about twenty minutes.

Fig. 3.—Thrombi removed from patient 4.

The procedure was then repeated on the right leg and a clot approximately the same size was removed (fig. 2). Similar results were noted in regard to pulsation in the field of operation. At the conclusion of the operation the left leg had lost some of the warmth gained after embolectomy, leaving it colder than the right.

The following morning the general condition of the patient was definitely worse. There was no radial pulse, and her hands and arms were almost as cold as her legs. The left leg was in its preoperative condition. The right leg showed relative warmth and good circulation as far down as the ankle; beyond that it was cold and livid. The patient left the hospital that day against advice and died the next day.

Bilateral embolism of the extremities is a rare occurrence. The diagnosis is difficult because contrast is not obtained between a normal and an abnormal extremity. This case demonstrates that embolectomy may be at least partially successful even in the presence of a weakened circulation and poor heart action. The complete failure of the operation on the left leg is best explained on the basis of extensive thrombus formation at the site of operation favored by the slow rate of circulation and the irreparable harm sustained by the intima during the sixteen hours that elapsed between the onset of the embolus and the time of operation.

CASE 3.—H. F., a man, aged 46, unmarried, an American, was admitted, March 10, 1929, with a diagnosis of alcoholic neuritis. For several days before entry he had been drinking and could not remember what had happened to him, except that he had possibly hurt his right arm. On the morning of the day of entry he was seized with severe abdominal pains, which localized about the level of the umbilicus and lasted about six hours. There was no nausea or vomiting. At 7 p. m., about two hours before admission, he suddenly developed tingling and "pins and needles" sensations in the thumb and index finger of the right hand. Shortly thereafter, he was seized with severe pain in the right wrist and hand. The fingers also became painful and numb and "curled up." The pain and numbness gradually extended up to the middle of the forearm and became constant, with occasional intervals of excruciating pain. The hand and wrist took on a grayish color.

On physical examination the patient appeared well developed and undernourished; he was writhing and tossing as a result of pain. Except for the local condition, examination was essentially negative. The right hand and distal half of the forearm were cold and cyanotic. Sensation over these parts was diminished; deep tendon reflexes were diminished, and the blanching produced by pressure did not disappear as rapidly as on the left forearm. The pulsation of the right radial and ulnar arteries was lost. The pulsation of the right brachial artery was felt as far as its bifurcation in the antecubital space. The blood pressure of the two upper arms was the same. However, with the sphygmomanometer cuff around the right forearm no oscillations of the mercury column could be detected, whereas normal oscillations were obtained in the left forearm by this method. Hot soaks to the arm and the administration of glyceryl trinitrate and amyl nitrite failed to alter the circulation in the hand and forearm or to alleviate the pain. A diagnosis of arterial embolism at the bifurcation of the right brachial artery was made by Dr. W. R. Berryhill and operation advised.

About five hours after the onset of symptoms, embolectomy was done by Dr. E. E. O'Neil.[7] Under local anesthesia an embolus 3 cm. long was removed from the right brachial artery at its bifurcation. There was a free flow of blood from the proximal portion of the artery. The distal portion was washed out with saline solution to remove thrombi.

Following the operation the circulation in the forearm and hand improved considerably, and except for the thumb and index finger, which became gangrenous and required amputation, the circulation and function of the hand returned to their normal states. One month after operation the radial pulse was not palpable, but four months later a weak pulsation was present.

This case is of interest because of the obscure etiology of the embolus. The patient gave no history of cardiac disease or of recent infection. Trauma to the artery proximal to the site of the embolus perhaps occurred. One is reminded of the "Saturday night paralysis" resulting from pressure on the nerves of the arm during a drunken stupor. The sphygmomanometer may be of value when there is any doubt as to the absence of arterial pulsation. We believe that embolectomy in this case accomplished its purpose of saving the forearm and the greater part of the hand.

Fig. 4.—Thrombi removed from patient 6.

CASE 4.—F. G., a man, aged 78, married, entered the hospital, March 26, 1929, complaining of pain in the right chest of two

7. A complete report of the operation and final result in this case is in preparation by Dr. O'Neil.

days' duration. The pain was sharp in character and was aggravated by breathing and coughing. For several years he had suffered from dyspnea, palpitation, precordial pain, and a severe cough productive of a thick mucoid sputum. These symptoms were constantly increasing, so that he was partially incapacitated. Soon after entry the pain in the chest was overshadowed by a more severe pain in the right thumb, hand and arm. This severe pain was shooting in character and radiated at times to the shoulder.

The patient had had a chancre fifty years before. Twenty-five years before he had been jaundiced, and his physician said that he had "cirrhosis of the liver."

On physical examination the patient appeared emaciated and cyanotic, and in great pain and respiratory distress. The heart was slightly enlarged, with its sounds absolutely irregular. There was a pulse deficit. The peripheral vessels were markedly sclerotic. There were dulness and many crepitant râles at both lung bases. The right hand and distal half of the right forearm were cold, cyanotic and motionless. The right radial and brachial artery pulsations were absent and there were no oscillations of the mercury column of the sphygmomanometer with the cuff around the arm. The proximal end of the brachial artery pulsated vigorously at a point where a thickened lump was palpable in the artery.

The diagnosis of embolism of the right brachial artery was made and embolectomy was done about two hours after the onset of symptoms.

Operation was performed by Dr. C. C. Lund. Under procaine anesthesia, with the patient sitting in a chair and the arm extended and externally rotated, an incision 4 inches long was made directly over the first portion of the brachial artery. By retraction of the median nerve and basilic vein, the artery was exposed for about 3 inches and the profunda branch for about an inch. The artery felt dilated at the branching of the profunda and much contracted just below it. There was a vigorous longitudinal thrust at the point of obstruction, and normal expansile pulsation just above it. A heavy catgut ligature was placed around the artery at the top of the incision and held by an assistant, and Crile clamps were placed on the distal ends of the main vessel and the profunda branch. A longitudinal incision, 1 cm. long, was made in the artery directly over the lower end of the clot, and a thrombus was removed (fig. 3), partly by expression with the finger and partly by the force of the blood stream when the ligature was released. The radial artery was then exposed at the wrist and by means of needle and syringe about 20 cc. of salt solution was injected. A flow of saline solution from the opening in the brachial artery carried a small thrombus before it and demonstrated the patency of the brachial and radial arteries. Free bleeding was demonstrated from the profunda branch also. The opening in the artery was closed by a layer of interrupted fine silk stitches and reinforced by a second layer of stitches in the adventitia.

Immediately after operation there was a definite expansile pulsation in the exposed part of the brachial artery but none in the radial. The following day a weak pulsation was felt in the radial artery, the arm and hand were warm, and the patient had no pain. The result in this case, as far as circulation and function of the arm and hand are concerned, was perfect. After ten days the blood pressure in the arm operated on was 125 systolic and 60 diastolic, and in the normal arm 110 systolic and 60 diastolic.

The patient's general condition showed some improvement at first. The heart action was improved with digitalis, but he continued to cough and raise large amounts of purulent sputum, and suffered from sharp pain in both sides of the chest. There was evidence of consolidation at both lung bases probably due to embolic infarcts. The patient gradually lost his appetite and finally was unable to retain any nourishment. He became progressively weaker and died, June 26, 1929, about thirteen weeks after operation.

Autopsy showed syphilitic aortitis, generalized arteriosclerosis, cardiac dilatation, bilateral fibrous pleuritis, and old infarcts in the right lower lobe of the lung. The aorta was dilated and tortuous and contained many ulcerating, fungating vegetations.

This case illustrates important points in diagnosis and surgical procedure. The embolus was felt as a thickened hard lump in the artery. At this point the pulsation of the artery was most vigorous, undoubtedly the result of the impact of the column of blood against the obstruction. At operation, when the artery was exposed, this impulse was seen as a longitudinal thrust beginning at the site of the embolus. In some of these cases a faint pulsation is also felt below the embolus, which accounts for the technical error, as observed by Key,[3] of exposing the artery below the embolus. Nordentoft,[8] in a recent report, calls attention to the pulsation of the embolus and how the surgeon is misled by it.

It is a well known fact that the success of the operation depends in a large measure on the complete removal of the embolus and the associated thrombus. To make certain that the operation has accomplished its purpose, the method of irrigating the occluded part of the artery from a point distal to the arteriotomy wound was made use of, the injected saline solution being permitted to escape from the latter opening. This procedure establishes the patency of the vessel beyond the point of the original obstruction. Moreover, Key [3] is of the opinion that the main embolus is often preceded by smaller ones which lodge distad to it. In these cases also the procedure of irrigating the artery with saline solution would either dislodge the emboli or, failing to do this, call attention to the block and the necessity for further surgical measures.

CASE 5.—J. G., a man, aged 57, single, an American laborer, entered the hospital, May 28, 1929, because of coldness and numbness of the left arm and hand. At the age of 12, he had received a kick in the left axilla from a horse. Shortly thereafter he noticed a pulsating, not tender tumor on the left side of his neck, just above the clavicle, which did not cause him any inconvenience. He was accustomed to sleep on his left side in order to compress the tumor. About eight days before entry, on awakening in the morning from his customary sleeping position, he developed twinges of pain, coldness, numbness and cyanosis in the left arm. The appearance of the left hand alternated between cyanosis and pallor for several hours, the former finally predominating, and the fingers became stiff and awkward. He was unable to feel the radial pulse on the left side.

He stated that he had never had venereal infection or symptoms of cardiac disease.

On examination, the left arm and hand were cold, clammy, and pale gray. The tip of the left index finger was infected; the tips of the remaining fingers showed reddish-blue areas of discoloration. Sensation and tendon reflexes were present but diminished. The pulsation of the left radial, brachial and distal portion of the axillary arteries could not be made out by palpation or by the use of the sphygmomanometer. The proximal portion of the axillary artery was dilated and contained a hard clot which pulsated vigorously. In the left supraclavicular region there was a pulsating tumor, about 4 cm. in diameter, moderately hard and not tender, with a slight palpable thrill but no audible bruit. The rest of the examination was negative. The blood pressure was 145 systolic and 80 diastolic in the right arm.

The blood Kahn reaction was negative. A 7 foot roentgenogram of the chest showed a normal sized heart.

A diagnosis of aneurysm of the left subclavian artery and embolism of the left axillary artery was made. The arm was immobilized on a pillow and kept warm constantly with dry heat. Every four hours it was soaked alternately in hot and in cold water. In the course of two weeks the circulation of the arm and hand gradually improved, the line demarcating the zone of coldness and grayish discoloration moving peripherally by degrees. The tips of the fingers, however, remained discolored to a slight extent, even four weeks after the appearance of symptoms in the left arm. Sensation and motility gradually

8. Nordentoft, J.: Two Cases of Embolectomy, Hospitalstid. **72**: 55 (Jan. 17) 1929; abstr. J. A. M. A. **92**: 1900 (June 1) 1929.

returned to normal except in the terminal phalanges, but the radial and brachial pulsations did not reappear.

This case illustrates a rare cause of embolism; namely, a thrombus dislodged from an aneurysm. In contrast to some of the other cases, it illustrates the influence which normal cardiac musculature and arterial walls have in reestablishing the collateral circulation. In the presence of myocardial weakness the chances of gangrene developing, even in embolism of the upper extremity, are very great.

CASE 6.—F. N., a man, aged 50, an American, married, was admitted, July 18, 1929, because of shortness of breath of two years' duration. Except for typhoid he had always been in good health. The dyspnea had developed gradually and was worse at night. About six months before admission to the hospital it increased in severity, forcing him to stay in bed the greater part of the time. A week before entry he developed a slight nonproductive cough, his ankles became swollen, and his abdomen appeared larger than usual. There was no history of precordial

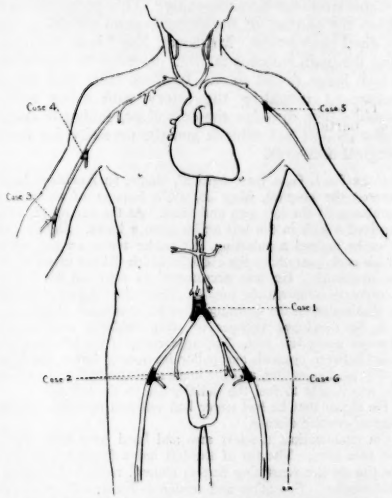

Fig. 5.—The location of emboli in the reported cases: case 1, bifurcation of the aorta; case 2, femoral arteries at the profunda branches; case 3, bifurcation of the brachial artery; case 4, brachial artery at the profunda branch; case 5, axillary artery, probably at the subscapular branch, and case 6, femoral artery at the profunda branch.

pain or hemoptysis. For a year he had been treated by his physician for "high blood pressure and heart disease," and "was given digitalis off and on."

On physical examination the patient appeared well developed and well nourished; he was propped up in bed and was breathing with some difficulty. The ocular fundi showed changes in the retinal vessels typical of arteriosclerosis. The heart was enlarged to the left and the sounds were of poor quality, irregular in rhythm and force, and with a rate of 96. The peripheral vessels were thickened and tortuous; the radial pulse was absolutely irregular at a rate of 58. The blood pressure was 165 systolic and 120 diastolic. The lungs showed slight dulness and medium crepitant râles at both bases. There was evidence of fluid in the abdomen and of edema of the lower extremities. The liver was not palpable, but there was tenderness in the right upper quadrant of the abdomen.

The urine showed the slightest possible trace of albumin and a few white blood cells. The blood Kahn reaction was negative and the blood nonprotein nitrogen 30 mg. per hundred cubic centimeters. A roentgenogram of the chest showed the heart enlarged in all diameters and the great blood vessels widened.

On admission, a diagnosis of hypertensive heart disease and auricular fibrillation was made. The patient was given a maintenance dose of digitalis, 1½ grains (0.1 Gm.) daily, which was omitted on the third day because of toxic symptoms. At midnight of the fifth day, he experienced slight pain and numbness in the left leg without calling any one's attention to it. About noontime of the following day he again complained of pain, numbness and tingling in the left lower leg. Examination showed the leg cold and cyanotic from the middle of the thigh downward. Sensation and motility of the leg were diminished, and there was an absence of pulsation in the popliteal and dorsalis pedis arteries. A weak pulsation of the femoral artery was felt below Poupart's ligament. The heart continued to fibrillate, but the sounds became of better quality. A diagnosis of embolism of the left femoral artery was made and embolectomy was done about twelve to fourteen hours after the onset of the first symptoms.

Operation was performed by Dr. E. D. Churchill. Under procaine anesthesia a 4 inch vertical incision was made in the left groin just below Poupart's ligament. The femoral artery was exposed for 3 inches of its length and the profunda branch was exposed for 1½ inches below its origin from the common femoral artery. At the point where the common femoral artery divides, it appeared distended and transmitted the pulse wave as a longitudinal thrust rather than as an expansile dilatation. The artery was occluded at the proximal end of the wound by a Crile clamp. Similar clamps were placed on the profunda and the distal part of the femoral artery. The arterial wall was opened with a longitudinal incision and a large thrombus removed (fig. 4). This thrombus was partially adherent to the intima and at one point an apparently organized clot that was closely adherent to the wall was gently removed by means of forceps. The clamps being left on the two divisions of the artery, the proximal end of the common femoral was grasped between the thumb and the forefinger while the Crile clamp was removed. By releasing the pressure of the fingers blood was allowed to spurt in a forceful stream from the artery, thus assuring a free stream from above. The clamp was reapplied to the common femoral artery and the one on the femoral branch removed. After a small thrombus which was lodged distal to the opening in the vessel wall had been milked up, a brisk flow of blood issued from this branch, showing a free connection with collaterals below the operative field. The clamp was replaced and the same procedure repeated with the deep femoral branch. The collateral flow was even more brisk from this branch than from the femoral artery. The longitudinal incision in the vessel wall was sutured with fine silk, a cobbler's stitch being used to approximate the intima. An over-and-over running stitch was used to close the adventitia. At one point reinforcement was needed with a single mattress suture after the clamps were removed. As a further effort to lessen the chances of gangrene, the femoral vein was ligated. There was definite expansile pulsation in the femoral and profunda branch at the conclusion of the operation, but pulsation could not be felt in the popliteal artery.

Twenty-four hours after operation a large bleb formed on the great toe and a line of demarcation slowly formed at the level of the ankle. The patient's strength gradually failed and he died, July 29, 1929.

One can attribute to the embolectomy a shifting of the line of demarcation from the middle of the thigh to the ankle. In this case the delay in operation undoubtedly played an important part in the final result, and was due chiefly to the patient's failure to report his symptoms. It is possible that the onset of symptoms marked the beginning of a partial occlusion of the iliac or femoral artery or, as Key [3] emphasizes, the lodging of small emboli peripheral to the main embolus. On the other hand, it must be remembered that, in the treatment of patients with cardiac decompensation, sedatives, including morphine, are used liberally, as was done in this case, and may mask the symptoms. The physician

should also bear in mind that embolism may occur in patients with cardiac disease after rigorous digitalis therapy. He must be particularly on guard against such an accident when digitalis is used for the first time.

COMMENT

Emboli occur mainly in cardiovascular disease and acute infections and after surgical operations. In all these conditions the left side of the heart is the most common source of the thrombus formation. In the cases reported, the heart was diseased in more than 80 per cent. Occasionally the pulmonary veins or a central spot in the arterial tree serves as a locus for thrombus formation. Rarely an embolus may arise from the right side of the heart or from the systemic veins. For this to be possible, there must be a patent foramen ovale. The embolus is then spoken of as a "paradoxical" embolus. When a thrombus is cast into the general circulation, it tends to lodge at a point of narrowing of the artery; i. e., a bifurcation or where a large branch is given off. The cases reported here illustrate this principle (fig. 5). Soon after the embolus lodges, secondary thrombus formation begins and gangrene may develop depending on the following factors: (1) the amount of spasm of the arteries as a result of their sudden closure by the clot; (2) the number and size of the emboli; (3) the location of the embolus; (4) the elasticity of the arteries; (5) the heart action; (6) the extent of thrombus formation, and (7) the age and general condition of the patient.

It is important to recognize arterial embolism early and to operate at once. The statistics of Key,[3] Petitpierre,[4] Danzis [9] and Dschanelidze and Ogloblina [10] indicate that the result depends in a large measure on the time elapsing between the lodgment of the embolus and its surgical removal. Good results are obtained in about 60 per cent of the patients operated on within ten hours and a relatively larger percentage of success is obtained if operation is done within three hours. However, operation is not contraindicated even when twenty-four hours or more has elapsed, because the circulation may be improved by embolectomy and the line of demarcation shifted more peripherally.

In addition to the time of operation, those factors which affect the development of gangrene are also important in determining the postoperative result. This is especially true of the location of the embolus. According to the figures given by Key,[3] if operation is performed within ten hours good results are obtained in three fourths of the cases of brachial and axillary emboli, in one half of the cases of femoral emboli, in one third of the cases of iliac emboli, and in one seventh of the cases of emboli in the aorta. In general, if the condition of the patient permits, embolectomy should be done. Even old age and arteriosclerosis are not contraindications, as demonstrated by the successful result in case 4. The result to be expected without operation is illustrated by two cases recently observed by us. One patient, a woman, aged 64, developed an embolus of the right axillary artery. Twenty-four hours later she died from bronchopneumonia and cardiac failure. In this case operation was not attempted. The other patient, a man, aged 75, developed an embolus in the right popliteal artery eight days before death. Operation was refused and the lower leg became gangrenous.

9. Danzis, M.: Arterial Embolectomy, Ann. Surg. **87**: 667 (May) 1928.
10. Dschanelidze, J. J., and Ogloblina, S. W.: Embolektomie, Arch. f. klin. Chir. **149**: 55, 1928.

No discussion of the symptomatology, diagnosis and localization of emboli or of the technic of operation is given here because these phases of the subject are presented completely in the papers referred to.[11]

SUMMARY

In six cases of arterial embolism of the extremities, the embolus was located in the axillary artery in one case, in the brachial artery at the profunda branch in one, at the bifurcation of the brachial artery in one, in the femoral artery at the profunda branch in two, in one of which both femoral arteries were obstructed, and at the bifurcation of the aorta in one. In four cases cardiovascular disease was the underlying cause of the thrombus and in one an aneurysm of the subclavian artery; in one the cause was not definitely established. The result from embolectomy in two cases was good so far as the circulation of the affected extremity was concerned. One of these patients, however, died thirteen weeks after operation as a result of myocardial disease. The other three patients operated on died from one to five days after embolectomy, in spite of postoperative improvement in the circulation of the extremities involved.

CONCLUSIONS

The success of embolectomy depends on various factors, particularly the time elapsing from onset of symptoms to operation and on the location of the embolus.

Narcotics may mask the symptoms in embolism of the extremities, thus jeopardizing the chances for early operative treatment.

The embolus is often palpable as a thickened lump and usually pulsates vigorously, the pulsation being transmitted down the occluded artery for a short distance.

The irrigation of an occluded artery with salt solution after the removal of the embolus may be useful in reestablishing the circulation of an extremity.

11. A discussion of the subject of embolectomy is also given by:
Allen, A. W.: The Surgical Treatment of Embolism of the Extremities, New England J. Med. **201**: 304 (Aug.) 1929.
Mason, R. L., and Hurxthal, L. M.: Femoral Embolectomy, New England J. Med. **198**: 277 (March) 1928.
Pemberton, J. de J.: Embolectomy: Report of Three Cases, Tr. South. S. A. **40**: 30, 1927.
Lahey, F. H.: The Treatment of Emboli in the Peripheral Vessels, S. Clin. North America **6**: 651 (June) 1926.

Former Epidemics of Yellow Fever.—It would be difficult to determine with accuracy the loss of life occasioned by the ninety-five invasions of our territory by yellow fever during the past 208 years. We have endeavored to collect from the most available sources the mortality caused by this disease but have been unable to obtain any reliable data for the earlier epidemics. If we confine ourselves to the epidemics which have occurred since 1793, we find that there have not been less than 100,000 deaths from this cause. The greatest sufferer has been the city of New Orleans, with 41,348 deaths, followed by the city of Philadelphia, with 10,038 deaths. The epidemics of 1855, 1873, 1878 and 1879 claimed 7,759 victims in the city of Memphis, Tenn. From 1800 to 1876, Charleston lost 4,565 of its citizens by attacks of yellow fever. New York, during the earlier and later invasions of this disease, has had 3,454 deaths, while the epidemic of 1855 in Norfolk, Va., caused over 2,000 deaths. During our brief occupation of the island of Cuba (July, 1898-December, 1900), with every precaution brought into exercise to ward off the disease, there have occurred among the officers and men of our army 1,575 cases of yellow fever, with 231 deaths. If we reckon the average mortality at 20 per cent, there have not been less than 500,000 cases of yellow fever in the United States during the period from 1793 to 1900.—Reed, Walter: The Prevention of Yellow Fever, read before the American Public Health Association at Buffalo in September, 1901.

Clinical Notes, Suggestions and New Instruments

ACCURATE BLOOD SUGAR DETERMINATIONS WITH ONE-TENTH AND FIVE-HUNDREDTHS CUBIC CENTIMETERS OF BLOOD

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AND
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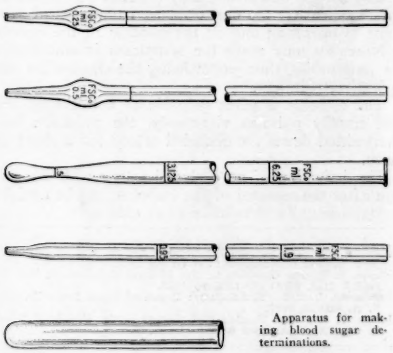
On the basis of our statistical comparison of blood sugar methods,[1] we offer a microtechnic of the Folin-Wu method as the best clinical technic for blood sugar determinations for the following reasons:

1. The technic is exceptionally accurate. There is only one micromeasurement, that of the blood, 0.10 or 0.05 cc. With blood containing from 75 to 150 mg. of dextrose per hundred cubic centimeters, we have shown by statistical methods that the Folin-Wu method has an average error not in excess of 2 per cent and a maximum error of 10 per cent, which is clinically negligible and needs no interpolation from the chart as is required with other blood sugar technics. By doubling the usual dilution of the blood we bring blood sugars of 300 mg. of dextrose within the range where readings are accurate and the wide divergences ordinarily appearing do not play a part. By further dilution of the blood when the sugar content is over 300 mg. we not only can bring readings of blood sugar within the range of least error but can make possible the use of minute quantities of blood, such as may readily be obtained even from infants. We have repeatedly checked this method against the macromethod and have found it as accurate as have other workers with Folin-Wu micromethods.



Apparatus for making blood sugar determinations.

2. There is sufficient supernatant fluid for three determinations (1.5 cc.) when 0.1 cc. of blood is used. Filtration is not necessary, with its accompanying waste of liquid.

3. Blood can be obtained by ear or finger punctures in 0.10 or 0.05 cc. quantities; therefore it is available from any patient of any age without distress or difficulty, and as often as needed, which are important points in dextrose tolerance tests.

REAGENTS

The reagents used are tungstic acid solution, prepared by mixing 1 cc. of 10 per cent sodium tungstate, 1 cc. of two-thirds normal sulphuric acid and 8 cc. of distilled water; Folin-Wu alkaline copper solution, and phosphomolybdic acid solution, which is discarded if it shows more than a pale color. Standard sugar solution containing 1 mg. of dextrose per 10 cc. is made from 1 per cent stock dextrose solution preserved with toluene or xylene.

APPARATUS AND TECHNIC

The apparatus comprises a pipet measured to contain 0.10 and 0.05 cc. for obtaining blood; a pipet graduated at 1.9 cc. (for 0.1 cc. blood) and at 0.95 cc. (for 0.05 cc. blood specimens). Serologic pipets may be used if properly graduated. Heavy walled tubes 10 cm. long, with an inside diameter of 1 cm., are used for centrifugation. Folin-Wu sugar tubes graduated at 6.25 cc. and at 3.125 cc., and Ostwald Folin 0.50 and 0.25 cc. pipets, are employed for the measurements.

A 1.9 cc. portion of the tungstic acid solution is pipetted into the 10 by 1 cm. tube. Into this, 0.1 cc. of blood obtained by ear puncture is expelled and washed, and mixed by shaking; when a chocolate color appears the tube is placed in the centrifuge and precipitated at high speed. (For 0.05 cc. of blood, 0.95 cc. of tungstic acid solution is used.) The usual Folin-Wu technic is then followed, 0.5 cc. of the supernatant fluid being pipetted into a Folin sugar tube with a 0.5 cc. Ostwald pipet, 0.5 cc. of the standard into another tube, 0.5 cc. of the alkaline copper solution added to each and both placed in boiling water for six minutes. They are then cooled; 0.5 cc. phosphomolybdic solution is added to both the standard and the blood; the solution is allowed to stand five minutes to develop the color, diluted to the mark, mixed, and read in the colorimeter. If the unknown is set at 20 mm. in the colorimeter and matched against the standard, the reading of the standard multiplied by ten is the sugar content in milligrams per hundred cubic centimeters of blood. For example, if the unknown is set at 20 and the standard matches at 10.2, the blood sugar is 102 mg. per hundred cubic centimeters of blood. Readings should be recorded to the nearest 5 mg.

COMMENT

The greater error inherent in the Folin-Wu method with high dextrose readings is the reason for the dilution of the blood in our technic to 1:20. The tungstic acid solution contains double the proportion of acid ordinarily used; with 0.10 cc. of blood this gives a more rapid precipitation and a more concentrated precipitate by centrifugation, with a resultant larger amount of clear supernatant fluid. Rechecks can be made without difficulty on the same specimen.

520 E Street.

1. Pickard, R. J., and Pierce, L. F.: Blood Dextrose Determinations: A Statistical Comparison of the Folin-Wu Method and the Benedict Modification of the Lewis-Benedict Method, J. A. M. A. 94: 480 (Feb. 15) 1930.

XYLENE IN THE TREATMENT OF PEDICULOSIS

CHARLES FERGUSON, M.D., ELLIS ISLAND, N. Y.
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The eradication of pediculi is a comparatively simple matter when the patients are under proper supervision and if the living conditions under which they became infested can be remedied. In the case of merchant seamen it is often difficult to apply appropriate remedies. Medical inspection is absent or deficient on many ships. The men are of necessity in the same quarters for several weeks. Practically always there is a member of the crew who is indifferent and careless in his personal hygiene, and as a result the remainder of the crew are persistently plagued with vermin.

Pediculosis pubis is the chief offender. It is not so noticeable as the corporis variety and does not cause the same amount of itching. Seamen often appear at the marine hospitals literally covered with these parasites. At the United States Marine Hospital, Ellis Island, we have cases on record in which the eyebrows, all of the eyelashes, the beard and the body hairs from the neck to the ankles were infested with pediculosis pubis and nits. Their presence is looked on with a surprising degree of tolerance by numbers of sailors.

Most of the ships are supplied with tincture of larkspur and mercury ointments. These preparations are effective if intelligently used for a sufficient time. A thin solution like tincture of larkspur has the disadvantage of quick evaporation; it is subject to much waste by the average sailor, and it does not remain long enough in proper concentration to kill the hatching nits. The mild mercurial ointment is to be preferred. It has the heavier base, remains effective longer, and has mild anti-

septic properties. However, it causes a dermatitis in many individuals. Prolonged and constant use of it by ignorant patients may lead to mercurialism.

With these preparations, and others of varying degrees of effectiveness too numerous to mention, the element of cost enters. This is a considerable item to the large clinics and to the medical departments of the steamship companies.

A preparation for pediculi which is not in extensive use at present and is effective and cheap is an ointment containing 25 per cent of xylene in a base of hydrous wool fat and petrolatum, equal parts. Sutton[1] calls attention to the effectiveness of xylene against pediculosis capitis in his textbook on diseases of the skin. If applied undiluted it is too irritating; mixed as directed it produces for a few minutes a mild warmth and tingling sensation of the skin. This is relieved by rubbing, which is desirable to get the ointment well spread over the skin and around the bases of the hairs. The patients are instructed to apply the ointment from the axillae to the ankles twice daily for at least five days. It is necessary to continue treatment for several days to insure the destruction of the hatching nits. These hatch in from four to seven days. This treatment has proved successful at this hospital. It is 51 per cent cheaper per pound than the mild mercurial ointment, is cleaner to handle, and has not caused any cases of dermatitis.

TWISTED PEDICLE OF ACCESSORY LOBE OF THE LUNG *

FREDERICK EPPLEN, M.D., AND A. L. JACOBSON, M.D., SEATTLE

Accessory or supernumerary lobes of the lungs are usually unimportant from a pathologic point of view. Either lung may have one or two extra lobes or rudimentary fissures; the extra lobes when present are usually small but may be quite large. They are generally located posteriorly, near the hilus, and have a broad or sessile base. Occasionally, as in our case, they are located anteriorly and are pedunculated, in which event they usually arise from the free margin of a standard type of lobe. Rudimentary fissures are sometimes seen; one happened to be present in our case, both abnormalities being in the left upper lobe.

The remarkable feature of our case was made possible by the simultaneous presence of a hydrothorax. The accessory lobe had floated in the hydrothorax and because of respiratory movements had made two and one-half turns from left to right. This had resulted in a high degree of passive congestion just short of gangrene.

REPORT OF CASE

W. W., a man, aged 70, entered the hospital, Feb. 26, 1929, because of cough of three weeks' duration; shortness of breath at various intervals for eight years, and swelling of the ankles, particularly during the past year. All his symptoms had been aggravated by a severe cold two years before. He had had gonorrheal arthritis thirty-two years before.

On examination the blood pressure was 120 systolic; the pulse 80, and the temperature 98.4 F. The head and neck were normal.

The chest was of the broad type. Expansion was equal and adequate. In the lungs there was dulness over the bases with absence of breath sounds. Breath sounds over the upper portion of the lungs were harsh with many wheezing râles. There was no cardiac thrill. Slight bulging of the precordium was noted. The dulness of the heart was greatly increased, merging with the dulness at the base of the lungs. A heaving apex beat was observed in the anterior axillary line. A loud blowing systolic murmur heard at the apex was transmitted to the left.

In the abdomen, free fluid was demonstrable.

The hands were cyanotic. The legs were edematous, with marked varicose veins.

The patient was digitalized and remained in the hospital only one week, regaining compensation, before entering King County Home.

The diagnosis was rheumatic heart disease with mitral insufficiency and decompensation.

September 1, the patient returned to the hospital, with dyspnea, ascites and edema. While at the home he had been able to care for himself and had walked about the grounds daily, but he could not do hard work.

Examination showed the heart enlarged to the anterior axillary line and the sixth interspace. A loud systolic murmur, blowing in character, was heard at the apex transmitted to the left.

The lungs were dull at the base with no breath sounds.

Marked ascites was present.

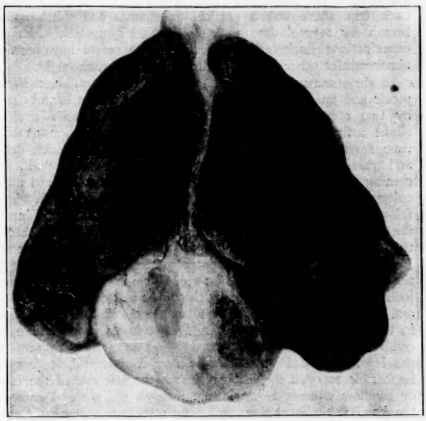
There was cyanosis of the hands.

The patient showed the usual symptoms of a decompensated heart until October 10, when pain in the chest became marked, followed by death.

The clinical diagnosis was the same as before: rheumatic heart disease, mitral insufficiency and cardiac decompensation. (No diagnostic interpretation of the pain in the chest was made.)

At autopsy the abdomen showed marked ascites, and the ankles were edematous.

When the body was opened, the abdominal viscera were found to be dark purple from postmortem changes. There were several liters of clear fluid in the abdomen, with about 2 liters in each pleural cavity. No adhesions were present.



Twisted pedicle of accessory lobe of the lung. The heart was 16 cm. wide in the upper part and 12 cm. from the base to the top. The accessory lobe was 10 cm. long; 7 cm. wide and 3 cm. thick.

The heart was enormously enlarged. The coronary vessels were tortuous and contained a few arteriosclerotic plaques visible through the pericardium. Pericardial fluid was normal in amount. The average amount of fat was present. The pulmonary semilunar valves and the tricuspid valves were normal. The right ventricular wall was 8 mm. thick. The margins of the aortic valves were slightly sclerosed. The valves were competent. The mitral valves were thickened along the margins and slightly shortened. There was a slight distortion of the openings of the coronary vessels by atheromatous plaques.

Attached to the left upper lobe of the lung was an accessory lobe twisted from left to right two and one-half turns on a narrow pedicle. This lobe was 10 cm. wide transversely, 7 cm. in perpendicular length, and 3 cm. thick. The pleura covering it was smooth; the lung tissue failed to crepitate and was dark blue, being many shades darker than the lung itself. A cut section dripped very dark red blood. The tissue did not appear gangrenous.

The anatomic diagnosis was mitral insufficiency with slight stenosis; bilateral hydrothorax; ascites; arteriosclerosis, and twisted pedicle of the accessory lobe of the left lung.

Stimson Building.

1. Sutton: Diseases of the Skin, ed. 5, St. Louis, C. V. Mosby Company.

* From the King County Hospital.

A REPORT OF PROGRESS ON THE USE OF EPHEDRINE IN A CASE OF MYASTHENIA GRAVIS

HARRIET EDGEWORTH, TUCSON, ARIZ.

Prior to an attack of influenzal pneumonia in December, 1918, I was considered a healthy, robust person with a capacity for work and exertion above the average. My previous history included the usual childhood diseases, nose and throat infections for which there had been two tonsillectomies, and two attacks of pneumonia. A relapse following the influenzal pneumonia was characterized by a marked prostration and weakness, and a tachycardia which in the absence of organic disease was attributed to a toxic depression of the vagus. A phlebitis also occurred at this time.

After several months in bed, during which these symptoms gradually improved, I resumed work in a research laboratory. The pulse rate was still above normal (from 100 to 120) and there was an increased fatigability. During the next five years, while working full time, there seemed to be an improvement in strength although exertion was followed by excessive fatigue as compared with the period previous to the infection. For example, in the summer of 1923, following an all day's horseback trip, there was a marked exhaustion and shortness of breath for several days with no cardiac symptoms. Medical examinations during this period did not reveal any positive abnormalities other than a slight tendency to overweight.

In the summer of 1924, while I was on a vacation, a slight ptosis and an intermittent diplopia developed. An examination by two ophthalmologists resulted only in a diagnosis of a slight astigmatism. A general physical examination at this time revealed nothing more than overweight, for which daily and persistent exercise was recommended. In the fall, on coming in from an all night obstetric case, I encountered difficulty in raising the right foot to the level of the curb. The following December, during a pharyngeal infection, the intermittent diplopia seemed more marked and there was an exhaustion and prostration out of proportion to the throat symptoms. Following this, I spent the winter in the South, during which time, on several occasions, the right arm showed a weakness in lifting power. In the spring the ptosis and diplopia increased and an ocular examination revealed a marked loss of function in the muscles of the left eye. I soon found it impossible to comb my hair. Gradual increasing weakness was apparent in the legs. While I was at home over a week-end, it became impossible to open the left eye, move the left side of the face or swallow without regurgitation through the nose. I entered the hospital the next day, and a neurologic examination (with negative results on the blood and spinal fluid and an absence of the myasthenic electrical reaction) led to a diagnosis of myasthenia gravis by several neurologists.

During the succeeding four years I spent the winters in Arizona in an attempt to avoid respiratory infections, which always caused an increase in the muscular weakness and from which recovery was never complete. During the summers I served as a research patient in three different hospitals. There were exacerbations and remissions with a general downward trend. By 1927 I was totally helpless, and chewing, swallowing and breathing were difficult. Also, there was a chronic cyanosis with alarming cyanotic attacks at times attributed to a myasthenic involvement of the vascular muscles. A tachycardia, poor pulse quality, and the electrocardiogram indicated a weak heart muscle.

In the summer of 1926 a searching chemical and metabolic investigation was conducted. My food intake was quantitatively determined and the blood, urine and feces constituents were studied. Also frequent basal metabolic rates were taken. The only positive observations were a lowered creatinine excretion and a daily creatinuria which averaged about 150 mg. In 1928, an autogenous vaccine was resorted to, after efforts at remedying locally a chronic sinus infection (with recurring attacks) had failed. It was thought that these infections might be depressing the function of already injured organs and that the deleterious effects might be directly due to the further reduction of some internal secretion. Following the vaccine treatment, the sinus infections became less severe and less frequent and the myasthenic symptoms improved. The improvement was especially noticeable in the circulatory, ocular and chewing functions. Also, there was a marked improvement in the ability to sleep. In the past four years, with the help of friends in medical research, every clue suggested by a rather searching review of the literature or by any responsible person has been tried. In all except the instances to be cited, these experiments have been either without effect or deleterious. Thyroid substance and epinephrine have always had adverse effects. Five differently prepared suprarenal substances were tried. The first was the common commercial preparation; the second was specially prepared by the Wilson Laboratories; the third was made by Dr. Alfred Koehler from beef suprarenal, and the fourth by Dr. C. C. Wang from the interrenal body of the dogfish; the fifth was fresh beef suprarenal obtained by Drs. Kendall and Szent-Gyorgyi and subjected to no treatment except freezing. The first was apparently without effect; the second and third preparations were followed by adverse effects; the fourth preparation was taken in very minute quantities and had a distinctly beneficial effect on the nervous symptoms with a small improvement in muscular strength. The latter might have been dependent on a better nervous tone. The last preparation of fresh, raw cortex was ingested in large amounts and was also followed by a decrease in nervous tension and an increased ability to sleep. However, there was no improvement in muscular strength.

During the summer of 1929, while I was taking tablets containing ephedrine ⅛ grain (8 mg.) and amidopyrine 1½ grains (0.1 Gm.) for menstrual cramps, my nurse and I noted a degree of muscular improvement much greater than had occurred for many months. Since the ephedrine was the only substance that had not been tried out before, I was suspicious of its relation to the improvement. When I dropped it, the weakness returned, but when it was resumed my strength increased again. On the daily dose of ⅜ grain (16 mg.) the improvement seemed to reach a maximum during the second week of its use. Again, when it was discontinued, the gain in strength was lost in forty-eight hours. At this point I entered the University of Minnesota hospital as a research patient for the study of another problem. While I was there, the ephedrine was discontinued without my knowledge for several weeks, during which it became impossible for me to move, even in bed, without help, and the visual, chewing and speech difficulties returned. The ephedrine was then resumed and the dose increased to ⅝ grain (48 mg.) daily. In a few days after beginning it again, I was able to rise from a chair unaided and to walk the distance of the room, and the other symptoms improved. In the past three months, I have taken ⅝ grain daily except for a few days. I am now able to walk the distance of several rooms, to get into and out of a car with a small amount of help, and to speak and chew without difficulty. I can raise my arms to my head for a few minutes, write a short letter, and read the morning newspaper without diplopia appearing. The pulse quality has improved, and I am much less conscious of a shortness of breath. The cyanotic symptoms have almost disappeared. Since I began using ephedrine, I have discontinued it seven times for experimental purposes —four times while taking ⅜ grain daily and three times while taking ⅝ grain daily. Each time, on discontinuing the smaller dose, I seemed to reach a pre-ephedrine level of weakness in forty-eight hours and it required from one to two weeks to regain the lost strength when I resumed the drug. On discontinuing the larger dose, I was conscious of an increase in weakness on the second or third day, but the loss of strength was much slower, and the level of weakness attained in two days after discontinuing the smaller dose did not seem to be reached until two weeks after discontinuing the larger dose. The improvement in strength is slow at present, but apparent.

The possibility of the present improvement being due to any psychic effect would seem to be ruled out by the fact that part of the experiment was conducted without my knowledge of it. The apparent favorable influence of ephedrine in this case of myasthenia gravis may be due to the stimulating action of this drug on the central nervous system, but I realize that only time will tell whether its use is therapeutically wise.

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Special Article

GASTRIC DISTURBANCES *

A. J. BEAMS, M.D.
AND
E. M. GERAGHTY
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A large percentage of patients with gastric and duodenal ulcer may be treated as ambulatory and since a more definite dietetic regimen has been required for patients finishing the usual Sippy routine, the following diets have been planned.

In attempting to function as a real service unit of the outpatient department, we found it necessary to assemble and test suggestive procedures along lines of dietary routine for the many people whose condition seemed to indicate a need for a smooth, bland diet with a relatively high fat content. In the progress of this study and after much evaluation of material presented, we adopted three gradations of diet, known to us as routine 1, 2 and 3. The diets supply enough calories so that the patients may remain at work and at the same time the foods are such as are tolerated by these patients.

Routine 1 is usually followed for three or four months. Routine 2 is employed for from two to three months. Routine 3 is a fairly liberal diet which provides an easy but slow transition to the normal diet.

* This is a chapter from a book by Dr. C. D. Christie, Dr. A. J. Beams and Miss Geraghty to be published shortly by the American Medical Association.

Miss Mary Margaret Hoffman, Miss Esther Funnel, Miss Theresa Wood, Miss Jean Grant, Miss Dorothy Ridler and Miss Olive Walker have contributed recipes and assisted in assembling the material presented in this series of articles.

We should like to make it clear that these lists or any other printed sheets which are disseminated in this way are at no time to be interpreted as an arbitrary standard but are to be used as a basis for dietetic instruction and only under the direction of a physician and the close supervision of an adequately trained dietitian.

These particular menus have been planned especially for patients whose income is limited and in whose homes there probably is inadequate equipment for preservation and storage of food. Each patient must be considered as an individual problem, and instruction must be given with regard for his food habits, occupation and economic status. The "Menus for the Rest of the Family" are aimed to help solve the housewife's problem of preparing two sets of meals each day. The other lists are self explanatory.

TABLE 1.—*Suggested Menus for One Week on Routine 1*

Morning	10:00 a. m.	Noon	3:00 p. m.	Evening	8:30 p. m.
Puréed prunes *Cream of wheat with milk and sugar Toast and butter Milk	Milk and graham crackers	Two poached eggs on toast Puréed spinach Toast and butter Baked custard Milk	*Ice cream Eggnog	Cream of spinach soup Puréed peas Toast and butter Canned pears Milk	Puréed prunes Top milk
Canned pears *Wheatena with milk and sugar Soft cooked egg Toast and butter Milk	*Baked custard *Malted milk	*Cream of pea soup Poached egg on toast *Gelatin and top milk Milk	Gelatin and top milk	Milk toast Puréed carrots Toast and butter Prune whip Milk	Graham crackers Puréed apricots Milk
Puréed apricots *Strained oatmeal with milk and sugar Toast and butter Milk	*Eggnog *Baked apple without skin	*Cream of spinach soup Puréed peas Toast and butter Chocolate junket Milk	*Junket Canned pears	Rice and milk Poached egg on toast Toast and butter Applesauce Milk	Baked apple without skin Top milk
Puréed prunes Pettijohns with milk and sugar Toast and butter *Cocoa	Buttermilk *Custard	Coddled egg Puréed asparagus Prune whip Milk and cream	Buttermilk Rice pudding	*Cream of asparagus soup Puréed peas Toast and butter Baked custard Milk	Canned pears Graham crackers Milk
Puréed apricots Ralstons with milk and sugar Toast and butter Milk	Milk and cream *Applesauce	Cream of pea soup Poached eggs on toast Rice with fruit sauce Milk	Junket Canned peaches	Rice and milk Puréed carrots Toast and butter *Apple snow Milk	Applesauce Toast Milk
*Baked apple without skin *Cornmeal with milk and sugar Toast and butter Milk	Baked custard Milk	Puréed spinach Soft cooked eggs Toast and butter Rice pudding Milk	Ice cream Cocoa	Cream of spinach soup Poached egg on toast Canned peaches Milk	Graham crackers Canned peaches Eggnog
Canned peaches *Malt breakfast food with milk and sugar Toast and butter Milk	*Rice pudding with top milk	*Cream of corn soup Puréed spinach Toast and butter Custard Milk	Malted milk Custard	Poached eggs on toast Puréed corn Toast and butter Applesauce Cocoa	Graham crackers *Tapioca cream Cocoa

* Recipes for these foods are given elsewhere in this series of articles.

ROUTINE 1

FOODS ALLOWED

Beverages: Buttermilk, cocoa, eggnog, malted milk, milk, milk and cream.

Cream Soups: Made with sweet cream, sour cream or white sauce and strained vegetables.

Breads: Toast, soda or graham crackers or zwiebach.

Eggs: Coddled, poached, raw or soft cooked.

Fats: Butter, cream, oil and oleomargarine.

Cereals: Cornmeal, cream of wheat, farina, hominy, malt breakfast food, strained oatmeal, pettijohns, ralstons, rice, wheatena.

Desserts: Apple snow, custard, gelatin, junket, prune whip, simple puddings; tapioca; ice cream, if eaten slowly.

Fruits: Applesauce, baked apple without the skin, canned or stewed peaches, stewed dried apricots (puréed), canned or stewed pears, stewed prunes (puréed).

Vegetables: Puréed asparagus, carrots, corn, peas, spinach, summer squash.

FOODS TO AVOID

Avoid salt and highly seasoned foods such as catsup, chili sauce, horseradish, mustard, pickles and spices.

Avoid acid foods such as grapefruit, oranges, tomatoes and vinegar.

Avoid vegetables such as dried beans, brussels sprouts, cabbage, cauliflower, onions, green peppers, radishes, sauerkraut and turnips.

Use fruits and vegetables only when cooked.

Avoid meats, chicken broth, meat soups and gravies.

Avoid fried foods, pastries and hot breads.

Avoid very sweet foods such as cakes, syrups and candies.

Do not eat nuts.

Do not drink tea or coffee.

Do not eat cheese.

NOTE.—Eat six small meals each day.

TABLE 2.—*Suggested Menus for One Week for the Rest of the Family of a Patient on Routine 1*

Morning	Noon	Evening
*Prunes *Cream of wheat with milk and sugar *Toast and butter *Milk or coffee	Pot roast of beef Mashed potatoes *Spinach Bread and butter *Baked custard *Milk	Cold meat Escalloped potatoes Carrot and pea salad Bread and butter *Canned pears *Milk or tea
Fresh fruit in season *Wheatena with milk and sugar *Toast and butter *Milk or coffee	Hamburg steak Mashed potatoes *Buttered carrots Bread and butter *Gelatin and cream *Milk	Hard cooked eggs Escalloped tomato Cabbage salad Bread and butter *Prune whip *Milk or tea
*Stewed apricots *Oatmeal with milk and sugar *Toast and butter *Milk or coffee	Beef stew with carrots, onions, potatoes *Peas Bread and butter *Chocolate junket *Milk	American cheese Baked *rice with tomatoes Lettuce salad Bread and butter *Apple sauce *Milk or tea
*Prunes *Pettijohns with milk and sugar *Toast and butter *Cocoa	Baked fish Mashed potatoes *Asparagus Bread and butter *Bread pudding *Milk	Creamed fish Baked potatoes Stringbean salad Bread and butter *Baked custard *Milk or tea
*Stewed apricots *Ralstons with milk and sugar *Toast and butter *Milk	Fish chowder *Buttered peas Bread and butter *Cornstarch pudding *Milk	Baked *rice and cheese Tomato salad Bread and butter *Apple snow *Milk or tea
*Baked apple *Cornmeal with milk and sugar *Toast and butter *Milk or coffee	*Eggs Baked potatoes *Spinach Bread and butter *Rice pudding *Milk	*Cream of spinach soup Bacon Baked dried lima beans *Bread and butter *Canned or stewed peaches *Milk or tea
*Stewed or canned peaches *Malt breakfast food with milk and sugar *Toast and butter *Milk or coffee	Lamb stew with potatoes, carrots and onions Bread and butter *Tapioca pudding *Milk	Baked hash *Corn Bread and butter *Apple sauce *Cocoa

* These are the foods which the patient may eat.

"IF YOU LUNCH AT A RESTAURANT"

Poached eggs on toast Toast and butter Apple sauce Milk	Cream of asparagus soup Toast and butter Soft cooked egg Applesauce Milk
Milk Toast Toast and butter Tapioca cream Canned peaches Milk	Boiled rice and milk Soft cooked egg Toast and butter Baked apple without the skin Milk.
Thick pea soup Toast and butter Carrots (mashed) Baked custard Milk	Poached eggs on toast Toast and butter Rice Pudding Applesauce Cocoa
Cream of corn soup (strained) Toast and butter Stewed or canned peaches Milk	

"DINNER PAIL LUNCHES"

Milk and cream Dry toast Baked custard Ice cream	Malted milk Graham crackers Gelatin Canned pears
Eggnog Dry toast Applesauce	Rice and milk Graham crackers Puréed prunes Gelatin
Cold cocoa Dry toast Baked apple without the skin Ice cream	Buttermilk Dry toast Rice pudding Gelatin
Eggnog Graham crackers Tapioca pudding Puréed apricots	

HOW TO PREPARE FOODS LISTED FOR ROUTINE 1

COCOA (1 serving)

Materials:

1 teaspoonful cocoa — ¼ cup boiling water
2 teaspoonfuls sugar — ⅝ cup milk

Method:

1. Mix cocoa and sugar
2. Add boiling water, stirring constantly
3. Put over flame
4. Boil two minutes
5. Heat milk in double boiler
6. Add cocoa mixture
7. Reheat and serve

Total recipe: protein, 6 Gm.; fat, 7 Gm.; carbohydrate, 19 Gm.; calories, 160.

WHITE SAUCE No. 1

Materials:

1 tablespoonful butter — 1 cup scalded milk
1 tablespoonful flour — ½ teaspoonful salt

Method:

1. Melt butter
2. Add flour
3. Stir until creamy
4. Cook over flame one minute, stirring constantly
5. Add milk gradually, stirring constantly
6. Cook over water until thick

Total recipe: protein, 10 Gm.; fat, 23 Gm.; carbohydrate, 18 Gm.; calories, 315.

WHITE SAUCE No. 2

Materials:

2 tablespoonfuls butter — 1 cup scalded milk
2 tablespoonfuls flour — ½ teaspoonful salt

Method:

1. Melt butter
2. Add flour
3. Stir until creamy
4. Cook over flame one minute, stirring constantly
5. Add milk gradually, stirring constantly
6. Cook over water until thick

Total recipe: protein, 11 Gm.; fat, 36 Gm.; carbohydrates, 23 Gm.; calories, 345.

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WHITE SAUCE NO. 3

Materials:

3 teaspoonfuls butter
3 teaspoonfuls flour
1 cup scalded milk
½ teaspoonful salt

Method:

1. Melt butter
2. Add flour
3. Stir until creamy
4. Cook over flame one minute, stirring constantly
5. Add milk gradually
6. Cook over water until thick

Total recipe: protein, 13 Gm.; fat, 49 Gm.; carbohydrate, 29 Gm.; calories, 607.

CREAM OF PEA SOUP (4 servings)

Materials:

1 cup peas
1½ cups white sauce No. 1
Few grains salt
1 slice onion
1 tablespoonful chopped parsley
4 teaspoonfuls whipped cream

Method:

1. Mash peas well
2. Heat white sauce with onion and add peas
3. Add salt and mix well
4. Strain through coarse sieve into hot soup dish
5. Sprinkle with parsley and place whipped cream on top

Total recipe: protein, 22 Gm.; fat, 38 Gm.; carbohydrate, 37 Gm.; calories, 622.

One serving: protein, 6 Gm.; fat, 10 Gm.; carbohydrate, 9 Gm.; calories, 155.

CREAM OF SPINACH SOUP (4 servings)

Materials:

1 cup spinach
2 cups hot white sauce No. 1
Salt

Method:

1. Add spinach to white sauce and heat thoroughly
2. Season
3. Strain into hot soup dish

Total recipe: protein, 35 Gm.; fat, 56 Gm.; carbohydrate, 42 Gm.; calories, 812.

One serving: protein, 8 Gm.; fat, 14 Gm.; carbohydrate, 10 Gm.; calories, 203.

EGG IN NEST (1 serving)

Materials:

1 egg
1 slice buttered toast
Salt
Parsley

Method:

1. Separate egg yolk from egg white
2. Beat white until stiff and pile on toast in shape of nest
3. Make a depression in center and drop yolk in this hollow
4. Cook in moderate oven three or four minutes.
5. Sprinkle with salt and garnish with parsley.

Total recipe: protein, 9 Gm.; fat, 10 Gm.; carbohydrate, 16 Gm.; calories, 190.

CREAM OF WHEAT (1 serving)

Materials:

2 tablespoonfuls cream of wheat
¾ cup boiling water
⅛ teaspoonful salt

Method:

1. Sift cream of wheat into boiling salted water, stirring constantly
2. Cook over flame five minutes, stirring constantly
3. Cook over water for two hours, stirring occasionally
4. Serve in hot cereal dish
5. Serve with sugar and cream

Total recipe: protein, 2 Gm.; fat, —; carbohydrate, 14 Gm.; calories, 64.

APPLE SNOW (2 servings)

Materials:

⅓ cup apple pulp
1 tablespoonful sugar
1 egg white

Method:

1. Add sugar to apple pulp
2. Beat egg white very stiff
3. Fold apple pulp into stiffly beaten egg white
4. Serve with soft custard

Total recipe: protein, 3 Gm.; carbohydrates, 34 Gm.; calories, 146.

One serving: protein, 2 Gm.; carbohydrates, 17 Gm.; calories, 73.

SOFT CUSTARD (2 servings)

Materials:

1 cup scalded milk
⅛ teaspoonful salt
1 egg yolk
1 tablespoonful sugar
½ teaspoonful vanilla

Method:

1. Beat egg yolk slightly
2. Add sugar and salt to egg yolk
3. Pour scalded milk over egg mixture, stirring constantly
4. Cook in double boiler until mixture thickens, stirring constantly
5. Remove from hot water to a pan of cold water
6. Strain into a bowl
7. When cool add vanilla

Total recipe: protein, 11 Gm.; fat, 16 Gm.; carbohydrate, 27 Gm.; calories, 296.

One serving: protein, 6 Gm.; fat, 8 Gm.; carbohydrate, 14 Gm.; calories, 148.

VANILLA ICE CREAM (5 servings)

Materials:

2 cups coffee cream, scalded
¼ cup sugar
2 teaspoonfuls vanilla
⅛ teaspoonful salt

Method:

1. Mix ingredients and freeze

Total recipe: protein, 14 Gm.; fat, 96 Gm.; carbohydrate, 80 Gm.; calories, 1,236.

One serving: protein, 3 Gm.; fat, 19 Gm.; carbohydrate, 16 Gm.; calories, 247.

JUNKET (4 servings)

Materials:

2 cups milk
½ junket tablet
½ tablespoonful water
2 tablespoonfuls sugar
½ teaspoonful vanilla

Method:

1. Heat milk to blood heat in double boiler
2. Dissolve junket tablet in water
3. Add sugar, vanilla and dissolved junket tablet to milk
4. Stir well
5. Pour into small cups
6. Keep in a warm place until set
7. Chill

Total recipe: protein, 16 Gm.; fat, 20 Gm.; carbohydrate, 54 Gm.; calories, 460.

One serving: protein, 4 Gm.; fat, 5 Gm.; carbohydrate, 14 Gm.; calories, 115 Gm.

RICE PUDDING NO. 2 (4 servings)

Materials:

½ cup rice
2 cups scalded milk
1 egg
½ teaspoonful salt
2 tablespoonfuls sugar

Method:

1. Wash rice
2. Scald milk in double boiler
3. Add rice to milk
4. Cook thirty minutes or until kernels are soft
5. Beat egg slightly
6. Add salt and sugar
7. Pour hot rice on egg, stirring constantly
8. Turn into baking dish
9. Bake twenty minutes in slow oven

Total recipe: protein, 30 Gm.; fat, 27 Gm.; carbohydrate, 133 Gm.; calories, 886.

One serving: protein, 8 Gm.; fat, 7 Gm.; carbohydrate, 33 Gm.; calories, 221.

APPLE SAUCE (4 servings)

Materials:

4 medium sized apples
2 tablespoonfuls sugar

Method:

1. Wipe, pare, quarter, core and slice apples
2. Cover with water
3. Cook rapidly until tender
4. Strain through a coarse sieve
5. Sweeten and flavor to taste
6. Chill and serve

Total recipe: protein, —; fat, 4 Gm.; carbohydrate, 98 Gm.; calories, 428.

One serving: protein, —; fat, 1 Gm.; carbohydrate, 25 Gm.; calories, 107.

PRACTICAL APPLICATION OF ROUTINE 1

John, a sturdy, stocky Austrian, came from a farm on the outskirts of the city to the dispensary for treatment for gastric ulcer and he listened attentively but without comment to the explanation of his diet with a final "Yes, Miss, I understand." He folded up the diet sheets and went out, leaving behind him a much perplexed dietitian. "Had he really understood? And how much? Could his wife prepare the foods? And where, away out there, could he get the milk and cream required?"

The next day she went out to visit him and as she walked along the seemingly endless country road she saw coming toward her a man leading a cow. He stopped in front of a trim little cottage and grinned broadly as she came up and then she recognized John.

"See, Miss, nice cow. You say milk and cream every day—no milk wagon come out here. I have three pigs and I trade for cow. Now I got plenty milk—all I want every day—come see where I put her," and the dietitian followed John, soon joined by John's wife and five children, to the tiny barn where the cow was installed with great ceremony.

A later visit revealed the fact that Mrs. John did not know how to poach eggs, so the dietitian prepared one. Mrs. John watched with almost breathless interest from the heating of the water to the careful placing of the egg on the toast and then she broke out "That's grand! Ain't that grand? If you'd told me I wouldn't have believed you could cook eggs out of their skins. I make now, you watch."

John's ulcer healed rapidly under this enthusiastic care, and the dietitian, visiting recently, found him working at his hot beds, transplanting the tiny lettuce plants. He was just as laconic as ever. "Yes, Miss, all right now, feel good; do lots of work—lots of work on a farm, Miss, and now it's spring, I hurry; get things done so they grow in the good sunshine." To make conversation, the dietitian asked about his truck garden and finally said "And of course you have some flowers?" "No, Miss, no flowers. I no bother with flowers, they pretty but I plant food; lots of hungry people in the world—lots of sick people—good vegetables food for hungry and make sick people well. I grow food."

TABLE 3.—*Suggested Menus for One Week on Routine 2*

Morning	10:00 a. m.	Noon	3:00 p. m.	Evening	8:30 p. m.
Puréed prunes Cream of wheat with milk and sugar Toast and butter Milk	Buttermilk Graham crackers	Boiled chicken Rice with gravy Puréed peas Toast and butter Gelatin and top milk Milk	Buttermilk Rice pudding	Cream of pea soup Poached egg on toast Toast and butter Apple sauce Cocoa	Prunes Toast and butter Milk
Apple sauce Wheatena with milk and sugar Toast and butter Cocoa	*Fruit juice gelatin with top milk	*Creamed chicken on toast Puréed spinach Toast and butter Rice with fruit sauce Milk	Graham crackers Eggnog Rice	Cream of spinach soup Baked potatoes Toast and butter Apricot tapioca pudding Milk	Milk and cream Graham crackers
Puréed apricots Strained oatmeal with milk and sugar Toast and butter Milk	Milk toast and butter Baked apple	Poached eggs on toast Baked potato Puréed asparagus Toast and butter Fruit juice gelatin with top milk	Ice cream Cocoa	Split pea soup (strained) Buttered rice Toast and butter Canned pears Milk	Baked apple Toast and butter Milk
Baked apple without skin Pettijohns with milk and sugar Toast and butter Milk	Apricot tapioca Eggnog	Baked fish Baked potatoes Puréed summer squash Toast and butter *Rice pudding with peaches	Malted milk Rice pudding	Cream of asparagus soup Toast and butter Puréed prunes Milk	Rice with peaches and top milk
Cornmeal with milk Puréed prunes and sugar Soft cooked eggs Toast and butter Milk	Buttermilk Custard	Cream of corn soup Baked potatoes Toast and butter Baked custard Milk	Buttermilk Graham crackers	Rice and milk Puréed spinach Toast and butter *Prune whip Milk	Pears Toast and butter Milk
Stewed or canned pears Ralstons with milk and sugar Toast and butter Milk	Baked custard Milk	Cream of asparagus soup Puréed peas Toast and butter Ice cream Milk	Ice cream Cocoa	Creamed eggs on toast Baked potatoes Toast and butter Baked apple without skin Milk	Applesauce Crackers Milk
Baked apple without skin Malt breakfast food with milk and sugar Toast and butter Milk	Milk toast and butter Gelatin	Scraped beef sandwich, toasted Puréed carrots Toast and butter Chocolate cornstarch pudding Milk	Eggnog Gelatin	Cream of pea soup Baked potatoes Toast and butter Apple snow Milk	Prune whip Toast and butter Milk

* Directions for preparing these foods are given elsewhere in this series of articles.

ROUTINE 2

FOODS ALLOWED

Beverages: Buttermilk, cocoa, eggnog, malted milk, milk, milk and cream, and S. M. A.

Cream Soups: Made with sweet cream, sour cream or white sauce and strained vegetables; oyster stew and clam broth.

Breads: Toast, soda or graham crackers or zwiebach.

Eggs: Baked, coddled, creamed, hard cooked, poached, raw, soft cooked or soufflés.

Fats: Butter, cream, oil and oleomargarine.

Cereals: Cornmeal, cream of wheat, farina, hominy, malt breakfast food, strained oatmeal, pettijohns, ralstons, rice, wheatena.

Desserts: Apple snow, custard, gelatin, junket, prune whip, rice and other simple puddings, tapioca. Ice cream if eaten slowly.

Fruit Juices: Cherry and loganberry.

Fruits: Applesauce, baked apple without the skin, stewed dried apricots (puréed), canned or stewed peaches, canned or stewed pears, stewed prunes (puréed).

Vegetables: Puréed asparagus, lima beans, carrots, corn, peas, split peas, spinach, summer squash; baked potatoes.

Meats: Creamed or boiled chicken, scraped beef balls (broiled).

Fish: Any fresh fish, creamed, baked or boiled.

FOODS TO AVOID

Avoid catsup, chili sauce, horseradish, mustard, pickles, salt, highly seasoned foods, spices.

Avoid acid foods such as grapefruit, oranges and tomatoes.

Avoid vegetables such as dried beans, brussels sprouts, cabbage, cauliflower, cucumbers, onions, green peppers, radishes, sauerkraut and turnips.

Use fruits and vegetables only when cooked.

Avoid chicken broth, meat soups and gravies.

Avoid fried foods, hot breads and pastries.

Avoid very sweet foods such as cakes, candies and syrups.

Do not drink tea or coffee.

Do not eat cheese.

Do not eat cold meat.

Do not eat nuts.

NOTE.—Eat six small meals each day.

"IF YOU LUNCH AT A RESTAURANT"

Boiled chicken	Cream Soup
Rice with milk and sugar	Poached eggs on toast
Toast and butter	Baked potato
Baked apple without the skin	Toast and butter
Milk	Ice cream
	Milk
Split pea soup	Broiled halibut
Summer squash	Baked squash
Toast and butter	Baked potato
Baked custard	Toast and butter
Milk	Apple sauce
	Milk
Cream soup	Cream soup
Baked potato	Toast and butter
Carrots (mashed)	Chocolate cornstarch pudding
Canned or stewed pears	Applesauce
Toast and butter	Milk
Milk	

Cream soup
Soft cooked eggs
Baked potato
Toast and butter
Fruit gelatin with cream
Milk

"DINNER PAIL LUNCHES"

Hard cooked egg	Applesauce
Dry toast	Dry toast
Applesauce	Baked custard
Malted milk	Milk
Baked custard	Baked apple
Graham crackers	Graham crackers
Baked apple without skin	Rice pudding
Milk	Milk
Dry toast	Rice with milk
Chocolate cornstarch pudding	Dry toast
Stewed or canned pears	Baked apple without skin
Eggnog	Milk

Hard cooked egg
Dry toast
Applesauce
Ice cream
Milk

TABLE 4.—*Suggested Menus for One Week for the Rest of the Family of a Patient on Routine 2*

Morning	Noon	Evening
*Prunes *Cream of wheat *Toast and butter *Milk or coffee	*Roast chicken *Rice with gravy *Peas Bread and butter *Gelatin with cream *Milk	*Poached eggs Lettuce and beet salad Bread and butter *Apple sauce *Cocoa
*Apple sauce *Wheatena with milk and sugar *Toast and butter *Cocoa	*Creamed chicken on toast *Baked potatoes *Spinach Bread and butter *Rice with fruit sauce *Milk	*Cream of spinach soup Cold meat *Baked potatoes Bread and butter *Apricot tapioca *Milk or tea
*Stewed apricots *Oatmeal with milk and sugar *Toast and butter *Milk or coffee	Hamburg steak *Baked potatoes *Stringbeans Bread and butter Bread pudding *Milk	*Split pea soup Creamed fish *Buttered rice Bread and butter *Canned pears *Milk or tea
*Baked apple *Pettijohns with milk and sugar *Toast and butter *Milk or coffee	*Baked fish *Baked potatoes *Summer squash Bread and butter *Rice pudding *Milk	Cold meat Escalloped tomatoes *Baked dried lima beans Bread and butter *Prunes *Milk or tea
*Prunes *Cornmeal with milk and sugar *Toast and butter *Milk or coffee	*Cream of corn soup Hash *Baked potatoes Tomato salad Bread and butter *Baked custard *Milk	Baked rice and cheese *Spinach Bread and butter Fresh, *stewed or *canned pears *Milk or tea
*Stewed, *canned or fresh pears *Ralstons with milk and sugar *Toast and butter *Milk or coffee	*Cream of asparagus soup Roast ham Mashed potatoes *Buttered peas Bread and butter *Ice cream *Milk	*Creamed eggs on toast *Baked potatoes Celery Bread and butter *Baked apple *Milk or tea
*Baked apples *Malt breakfast food with milk and sugar *Toast and butter *Milk or coffee	Lamb stew with potatoes *Carrots, and onions Bread and butter *Chocolate cornstarch pudding *Milk	*Cream of corn soup Bacon *Baked potatoes Sliced tomatoes *Apple snow *Milk or tea

* These are the foods which the patient may eat.

HOW TO PREPARE FOODS LISTED FOR ROUTINE 2

EGGNOG No. 1

Material:

- 1 egg
- 1 teaspoonful sugar
- ⅛ teaspoonful salt
- ¼ teaspoonful vanilla or few grains nutmeg
- ½ cup cold milk

Method:

1. Beat egg slightly
2. Add sugar, salt and flavoring to egg
3. Add milk to egg mixture
4. Beat thoroughly
5. Strain into a cold glass
6. Serve at once

Total recipe: protein, 10 Gm.; fat, 11 Gm.; carbohydrate, 11 Gm.; calories, 183.

EGGNOG No. 2 (1 serving)

Material:

- 1 egg yolk
- 1 teaspoonful sugar
- ⅛ teaspoonful salt
- ¼ teaspoonful vanilla
- ½ cup cold milk
- 1 egg white

Method:

1. Beat yolk of egg slightly
2. Add sugar, salt and flavoring
3. Add milk and mix well
4. Beat egg white until stiff and fold into other mixture
5. Serve in a tall glass

Total recipe: protein, 10 Gm.; fat, 11 Gm.; carbohydrate, 11 Gm.; calories, 183.

CREAM OF LIMA BEAN SOUP (2 servings)

Materials:

1½ cups white sauce No. 1
1 cup green lima beans, puréed
Salt

Method:

1. Combine white sauce and lima beans
2. Season
3. Strain into serving dish

Total recipe: protein, 24 Gm.; fat, 35 Gm.; carbohydrate, 64 Gm.; calories, 669.

One serving: protein, 12 Gm.; fat, 18 Gm.; carbohydrate, 32 Gm.; calories, 334.

CREAM OF CORN SOUP (4 servings)

Materials:

1 cup canned corn
1½ cups white sauce No. 1
Salt

Method:

1. Heat corn
2. Rub through a strainer
3. Mix with white sauce
4. Season with salt
5. Strain into serving dish

Total recipe: protein, 20 Gm.; fat, 38 Gm.; carbohydrate, 73 Gm.; calories, 712.

One serving: protein, 5 Gm.; fat, 9 Gm.; carbohydrate, 18 Gm.; calories, 178.

CREAMED EGGS (1 serving)

Materials:

1 egg
¼ teaspoonful salt
1 pint boiling water
Few grains pepper
¼ cup white sauce No. 2

Method:

1. Place egg in pan
2. Pour boiling water over egg
3. Let stand (covered) in warm place for thirty minutes
4. Remove from hot water
5. Cool by covering with cold water
6. Remove shell
7. Slice into hot white sauce
8. Season with salt and pepper
9. Reheat and serve

Total recipe: protein, 9 Gm.; fat, 15 Gm.; carbohydrate, 6 Gm.; calories, 192.

BAKED EGGS (1 serving)

Materials:

1 egg
1 teaspoonful butter
Salt

Method:

1. Butter a small baking dish
2. Break egg into baking dish, being careful not to break yolk
3. Sprinkle with salt and dot with butter
4. Place dish in small pan of hot water
5. Place pan in moderate oven
6. Bake until white of egg has set
7. Serve at once

Total recipe: protein, 6 Gm.; fat, 10 Gm.; carbohydrate, —; calories, 114.

CORNMEAL (1 serving)

Material:

2 tablespoonfuls cornmeal
⅛ teaspoonful salt
⅔ cup boiling water

Method:

1. Sift cornmeal into boiling salted water
2. Cook over flame five minutes, stirring constantly
3. Cook over water three hours, stirring occasionally
4. Serve in a hot cereal dish
5. Serve sugar and cream with cornmeal

Total recipe: protein, 1 Gm.; fat, —; carbohydrate, 16 Gm.; calories, 70.

SPANISH CREAM (2 servings)

Materials:

1 teaspoonful gelatin
1 tablespoonful sugar
1 cup milk
Pinch salt
1 egg
1 teaspoonful vanilla

Method:

1. Soak gelatin in ¼ cup cold milk
2. Scald remaining milk
3. Add sugar and salt to egg yolk and beat until thick and lemon colored
4. Pour scalded milk on egg yolk
5. Cook in double boiler until mixture begins to thicken
6. Remove from fire and add soaked gelatin and vanilla
7. When partially cool add stiffly beaten egg white
8. Pour into molds and put in a cool place

Total recipe: protein, 18 Gm.; fat, 16 Gm.; carbohydrate, 27 Gm.; calories, 320.

One serving: protein, 9 Gm.; fat, 8 Gm.; carbohydrate, 14 Gm.; calories, 160.

MALTED MILK CUSTARD (2 servings)

Materials:

1 egg
1 cup scalded milk
2 tablespoonfuls sugar
¼ teaspoonful salt
4 tablespoonfuls malted milk
½ teaspoonful vanilla

Method:

1. Beat egg
2. Add sugar and malted milk
3. Continue beating until smooth
4. Pour scalded milk over egg
5. Add salt and vanilla
6. Strain into custard cups
7. Set cups in a pan of hot water
8. Bake in a slow oven until firm

Total recipe: protein, 20 Gm.; fat, 19 Gm.; carbohydrate, 70 Gm.; calories, 454.

One serving: protein, 10 Gm.; fat, 10 Gm.; carbohydrate, 35 Gm.; calories, 227.

APRICOT WHIP (2 servings)

Materials:

9 halves stewed apricots
1 egg white
1 tablespoonful sugar

Method:

1. Rub apricots through a strainer
2. Add sugar
3. Beat egg white until very stiff
4. Fold apricot pulp into stiffly beaten egg white
5. Serve with soft custard

Total recipe: protein, 5 Gm.; fat, —; carbohydrate, 51 Gm.; calories, 223.

One serving: protein, 2 Gm.; fat, —; carbohydrate, 25 Gm.; calories, 111.

PEACH JUICE GELATIN (1 serving)

Materials:

1 teaspoonful gelatin
1 tablespoonful cold water
½ cup canned peach juice

Method:

1. Add cold water to gelatin; soak for three minutes
2. Heat peach juice to boiling point and add to gelatin
3. Stir constantly until dissolved
4. Put in cool place
5. When firm remove from mold and serve

Total recipe: protein, 4 Gm.; fat, —; carbohydrate, 10 Gm.; calories, 53.

SPINACH SOUFFLÉ (3 servings)

Materials:

2 tablespoonfuls butter	⅔ cup scalded milk
4 tablespoonfuls flour	1 cup cooked spinach
½ teaspoonful salt	3 eggs

Method:

1. Melt butter
2. Add flour and salt
3. Stir until creamy
4. Cook over flame one minute, stirring constantly
5. Add milk gradually to butter and flour, stirring constantly
6. Cook over water until mixture thickens, stirring constantly
7. Continue cooking for thirty minutes, stirring occasionally
8. Rub spinach through a strainer and add to white sauce
9. Beat the egg yolks and slowly add the white sauce
10. Fold in stiffly beaten egg whites
11. Pour in buttered baking dish
12. Place dish in hot water
13. Bake in slow oven until firm
14. Serve at once

Total recipe: protein, 31 Gm.; fat, 59 Gm.; carbohydrate, 36 Gm.; calories, 795.

One serving: protein, 10 Gm.; fat, 20 Gm.; carbohydrate, 12 Gm.; calories, 265.

CREAMED CHICKEN (1 serving)

Materials:

¼ cup white sauce No. 2	½ cup cold cooked chicken cut in pieces

Method:

1. Heat white sauce in double boiler
2. Add cold chicken
3. Allow to remain in double boiler until thoroughly heated

Total recipe: protein, 13 Gm.; fat, 18 Gm.; carbohydrate, 6 Gm.; calories, 233.

CREAMED FISH (1 serving)

Materials:

⅓ cup cold, cooked fish	¼ teaspoonful salt
½ cup white sauce	Few grains pepper

Method:

1. Break up fish into flakes
2. Heat white sauce
3. Season with salt and pepper
4. Serve at once

Total recipe: protein, 19 Gm.; fat, 9 Gm.; carbohydrate, 6 Gm.; calories, 183.

PRACTICAL APPLICATION OF ROUTINE 2

"This is Carl," the doctor said from the doorway, "put him on routine 2. I don't know how much you'll get over to him," he added as he turned away. "He can't speak English."

The dietitian looked at Carl, and Carl, a mild looking man of about 40, looked at her. "No spik English," he volunteered.

So the dietitian began an object lesson in cooking and in a few needed foods. She showed him the foods he should eat and then demonstrated carefully cream soup. Carl watched closely, smiled and then said "Pete." "Who's Pete?" the dietitian asked, but Carl replied in Roumanian.

The next day the dietitian visited Carl in the queer ramshackle tenement where he lived. Carl came to the door, smiled broadly when he saw her and called "Pete!" Pete came forward from an inner room; a tall, broad shouldered man with bright dark eyes and fierce mustachios. He spoke in English. "Good day, Mees," he said as he bowed her into a chair. "Carly he tell me all he should eat and see, I get." He began to pull bags and boxes from the shelves. "See—farina, eggs, milk. All that you say. I cook in the old country and I know all that you tell me. Carly get well now." He sat back and folded his hands over his generous waistcoat. "Carly and me we friends in the old country. I come here, then he come. Now he sick I take care of him." The dietitian talked about the list of "mustn'ts" stressing "no coffee," and Pete said, "Mees, I make him carrot coffee. In the old country we give to children. Carly like baby and I make carrot coffee. You come next week, I teach you how."

(To be continued)

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY OF THE AMERICAN MEDICAL ASSOCIATION HAS APPROVED THE FOLLOWING DEFINITIONS.

H. J. HOLMQUEST, Secretary.

HOT WIRE METER. A type of meter used to measure the amperage in high frequency circuits. The needle of the meter is connected to a wire having a known thermic expansion under the passage of a certain milliamperage and, as the wire expands, the needle moves across a calibrated scale until it indicates the amperage.

INSULATOR. That which insulates; specifically, a substance or body that interrupts the transmission of electricity to surrounding objects by conduction; anything that exerts great resistance to the passage of an electric current by conduction.

INTERRUPTER. A mechanical or electrolytic device for making and breaking (closing and opening alternately) an electrical circuit. Such a device is ordinarily employed in low-voltage, direct-current circuits.

ION. One of the electrified particles consisting of an atom or group of atoms into which the molecules of an electrolyte are divided; or one of the electrified particles into which the molecules of a gas are divided by ultraviolet rays, gamma rays or x-rays, or by other ionizing agents.

IONIC MEDICATION. The introduction of chemical ions into the superficial tissues for medicinal purposes by means of a direct current. The basic rules are: Like forms of electricity repel each other; unlike forms attract each other. Bases, metals and alkaloids are electropositive and hence should be placed at the positive pole. Acids and acid radicals are electronegative and hence should be placed at the negative pole. Examples of this: Potassium iodide for the introduction of free iodine should be placed at the negative pole, cocaine hydrochloride for local anesthesia at the positive pole.

IONIZATION. The dissociation of a solute when placed in solution (or gases under certain conditions) into ions or into ions and electrons. This dissociation is automatic and can be independent of the application of any outside force. Solutions that ionize are conductors of electricity, and those that do not are nonconductors. Acids, bases and salts are the best known examples of the former, and chloroform, ether, alcohol, fats and certain oils, of the latter.

LEYDEN JAR. A glass jar coated partially, inside and out, with metal, or coated outside with metal and having salt solution inside. It is a condenser.

LOW FREQUENCY. An alternating current whose frequency in cycles per second is low in reference to a particular standard, such as the pitch frequency of "middle C" or, in some cases, the common frequency limit of audition. In general, low-frequency currents are attended by tetanic contraction when passed through the body.

MAINS OR MAIN LINE. The conductors that deliver the current as it comes in from the street supply or from a motor-generator, if one is used.

METER. A standardized device for measuring.

MILLIAMMETER. See Ammeter.

MILLIAMPERE. One one-thousandth of one ampere.

MILLIAMPERE-MINUTE. An electrical unit of quantity, equivalent to that delivered by one milliampere in one minute.

MILLIMICRON. A subsidiary metric unit of length much used in the measurement of light waves. It is one billionth of a meter, or one millionth of a millimeter, and is thus ten times as long as an angstrom unit.

MOLECULE. A chemical combination of two or more atoms which form a specific chemical substance; the chemical elements are formed by the combination of like atoms. Combinations of dissimilar atoms form chemical compounds. In normal molecules the positive and negative electric charges exactly balance. Excess or deficiency of either positive or negative charge by the loss or acquisition of negative electrons results in the formation of an ion.

MONOTERMINAL. Use of one terminal only in the giving of treatments, the ground acting as the second terminal for the completion of the electrical circuit.

MORTON WAVE CURRENT. An electric current obtained from a static machine and applied as follows: A flexible metal electrode, connected to the positive side of the static machine, negative grounded, is placed on the part to be treated. Contractile impulses resulting in decongestion of soft tissue are obtained at each spark discharge, at the rate of two or three per second. The rate and intensity are regulated by the speed of the motor and the length of the spark gap.

MOTOR GENERATOR. A transforming device consisting of a motor mechanically connected to a generator. Such machines are designed to generate direct current when alternating alone is available, or vice versa.

MULTITERMINAL. Providing several sets of terminals, making possible the use of several electrodes.

NONCONDUCTOR. A substance that will not conduct electricity. Strictly speaking, there is no perfect nonconductor. On the application of a sufficiently high voltage, current may be caused to flow through materials usually spoken of as nonconductors. (See insulator.)

NONELECTROLYTE. A solution that is a nonconductor.

OHM. Practical unit of resistance to current flow. It is the equivalent of the resistance offered to the passage of one ampere by a conductor on which is impressed an electromotive force of one volt. The legal ohm (Paris Congress of 1884) is the resistance offered by a column of mercury 106 centimeters long and one square millimeter in cross section at 0 C. The legal ohm has been generally superseded by the international ohm (Chicago Congress of 1893) of 106.3 cm.

OHM'S LAW. The law, determined experimentally by the physicist Ohm, which states that the strength of an electric current in a direct current circuit varies directly as the applied electromotive force, and inversely as the resistance of the circuit; or, the current I expressed in amperes equals the electromotive force E in volts, divided by the resistance R in ohms: $I = \frac{E}{R}$

OPEN CIRCUIT. A circuit having some break in it so that current is not passing or cannot pass. This break may be intentional, as an open switch, or accidental, as a blown fuse, a loose connection or a broken wire.

OSCILLATING CURRENT. A current alternating in direction, and of either constant or gradually decreasing amplitude. An oscillating current of constant amplitude is called an undamped current; one of gradually decreasing amplitude, a damped current.

OSCILLOSCOPE. 1. An instrument in which a vacuum tube is employed to develop light and indicate, when electric currents are passed through it, whether they are unidirectional or alternating in character. 2. A device used to determine the form of an electric current wave.

OUDIN CURRENT. A high frequency current of higher voltage than the high frequency currents used for ordinary diathermy treatments.

PARALLEL OR MULTIPLE CONNECTION. See Shunt Connection.

PERIODICITY. The rate of rise and fall or interruption of a unidirectional current.

PHORESIS. The transmission of chemical ions into the tissues by means of an electric current.

PHYSICAL THERAPY. Physical therapy is the therapeutic use of physical agents. It comprises the use of physical, chemical and other properties of heat, light, water, electricity, massage and exercise.

PHYSICAL THERAPIST. A medical graduate skilled in physical therapy.

PHYSICAL THERAPY TECHNICIAN OR AIDE. A lay assistant trained to apply the physical measures of treatment which have been prescribed by a physician.

POLE CHANGING SWITCH. A switch by which the polarity of a circuit may be reversed.

POTENTIAL. The condition of electrical tension in a body, manifested by the production of electrical effects in other bodies of different potential, or in a different state of electrical tension. When two bodies of different potential are brought together, a current passes from the high to the low potential until the two are of equal potential, when electrical action ceases.

POWER. Rate at which work is being done. The electrical unit of power is the watt. (See watt.)

PROTON. The nucleus of the hydrogen atom. It is assumed to be the unit positive charge of electricity. (See Electron.)

PULSATING CURRENT. A current pulsating regularly in magnitude. As ordinarily used, applies to a unidirectional current.

RADIANT ENERGY. That form of energy which is transmitted through space without the support of a sensible medium. Radio waves, infra-red rays, visible rays, ultraviolet rays, x-rays, gamma rays, and the recently discovered cosmic rays are energy in this form.

RECTIFIER. A device for obtaining a unidirectional current from an alternating current.

RESISTANCE. The opposing influence of a body (solid, liquid or gaseous) to the passage of an electric current. It is expressed in ohms; one ohm of resistance will permit the flow of a current of one ampere as the result of a pressure of one volt. The effect of the expenditure of electrical energy in resistance is to generate heat.

RESONATOR. An electrical circuit in which oscillations of a certain frequency are set up by oscillations of the same frequency in another circuit. When this occurs, the circuits are said to be in syntony.

RHEOSTAT. A fixed or variable resistance for controlling the amount of current entering a circuit.

SERIES CONNECTION. When two or more electrical devices or resistances are so connected that the current flows through them in succession, they are said to be connected in series.

SHORT CIRCUIT. An accidental overflow of current due to the establishment of a low-resistance by-pass.

SHUNT CONNECTION. When two or more electrical devices or resistances are so connected that the current is divided between them, the current through each device or resistance being inversely proportional to the resistance, they are said to be connected in shunt, parallel or multiple, with one another.

SINUSOIDAL CURRENT. (Also see Alternating Current.) An alternating current following the sine law and of such frequency as to afford the opportunity of separate (clonic) muscular contractions.

SOLENOID. A coil or series of turns of wire spaced equally between turns. Usually designates a coil whose length is greater than its diameter. When an electric current flows through a solenoid, the solenoid acts in general like a magnet.

SPARK BALL OR POINT ELECTRODE. An insulating handle having on one end a metallic ball or point. Used in giving static sparks.

SPARK GAPS. Arrangement of opposed points or surfaces, between which an electric spark may jump. An adjustable gap between needle points or between spheres is used to measure high potentials. For spark-over voltages see American Institute of Electrical Engineers Standardization Rules.

TENSION. Sometimes used as a synonym for voltage: thus high tension would mean high voltage.

TESLA CURRENT. A high frequency current of higher voltage than that of the high frequency currents used for ordinary diathermy treatments but not so high as that of the Oudin current.

TRANSFORMER. A stationary induction apparatus to change electrical energy at one voltage and current to electrical energy at another voltage and current, through the medium of magnetic energy, without mechanical motion. It consists of a primary and a secondary winding placed on a core built up of thin sheets of steel, called laminations. These windings are ordinarily insulated one from the other (see Autotransformer). The primary winding receives the energy from the supply circuit, and the secondary receives the energy by induction from the primary. The electromotive force induced in the secondary winding depends on the number of turns in that winding and is approximately equal to the primary voltage

multiplied by the ratio of secondary turns to primary turns. A device of this nature can of course be used only with alternating current.

UNITERMINAL. (See Monoterminal.)

VALVE TUBE. A vacuum tube, used to rectify alternating current. A tube of this nature permits the flow of current in one direction only and therefore filters out every alternate half cycle of an alternating current.

VOLT. An electrical unit of pressure. It is the electromotive force required to force one ampere through a resistance of one ohm.

VOLTAGE. Electromotive force or difference in potential expressed in volts.

VOLTMETER. A meter designed and calibrated to measure voltage. Voltmeters are connected in parallel with the circuit or resistance over which the potential drop is to be measured.

WATT. A unit of electric power. Its mechanical equivalent is 10^7 ergs per second; or 0.7376 foot-pounds per second. In direct current circuits the wattage equals current in amperes multiplied by the drop in voltage. In alternating current circuits the wattage equals the effective current in amperes multiplied by the effective voltage and the cosine of the angle of their phase difference.

WATT-HOUR. An electrical unit of work or energy. It is equal to the wattage multiplied by the time in hours. Its mechanical equivalent is 2,655 foot-pounds.

WATT METER. A meter for measuring electric power.

WATTAGE. The power output or consumption of an electrical device expressed in watts.

Council on Pharmacy and Chemistry

COMMITTEE ON FOODS

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COMMITTEE ON FOODS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

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JULIUS H. HESS.
W. MCKIM MARRIOTT.
LAFAYETTE B. MENDEL.
GROVER F. POWERS.
H. C. SHERMAN.
MORRIS FISHBEIN, Chairman.

KLIM POWDERED WHOLE MILK

Manufacturer.—Merrell-Soule Co.

Composition.—Whole milk from which all but about 2 per cent or less of the normal water has been removed by means of the spraying process of drying milk.

Constituents

Fat	28.0%
Protein	26.7%
Lactose	38.0%
Ash	5.8%
Water	1.5%
	100.0%

Process.—Pure whole milk produced by carefully supervised sanitary methods from tuberculin tested and inspected cattle, where it undergoes laboratory tests for chemical and bacterial composition. Accepted milk is standardized to conform to federal and state standards for powdered milk. The milk is pasteurized in the absence of air at a temperature of at least 145 F. and held for thirty minutes in glass-lined tanks having recording thermometers. Part of the water is removed in vacuum pans which operate at a temperature of about 120 F. The pans operate so rapidly that the milk is not in the pan over two minutes. The resulting product is then sprayed through a fine nozzle, a pin point in size, under a high pressure into a tin lined chamber into which a current of hot air is passing. The temperature of this chamber is between 170 and 180 F. but the process is such that the albumin is not coagulated. This process is practically instantaneous and the machines have a capacity of about 250 to 400 pounds per hour. The water in the milk is carried off as a vapor in the hot air, and the milk solids fall like snow to the floor of the chamber, from which they are removed at regular intervals as a powder. Laboratory tests for bacteria, solubility, flavor, butter fat and moisture are performed as a routine on every lot of the powdered milk. The powdered milk from the machines is placed in 1, 2½ or 5 pound tin cans. These are hermetically sealed in the absence of air so as to prevent any deterioration. After inspection, the cans go to the market.

Claims.—For supplementary feeding. Contact with the laity is predicated on the policy that Merrell-Soule products be used in infant feeding only according to a physician's formula.

Bacterial action is arrested; pathogenic bacteria are absent; the vitamins are not destroyed; the casein and butter fat are physically so changed as to render them more easily digestible; the sweet milk products are soluble; the precurdled products (as protein milk) form in finer suspension than do their laboratory or hospital made counterparts; the products keep indefinitely in the unopened can.

BORDEN'S NATURAL FLAVOR MALTED MILK

Manufacturer.—The Borden Company, 350 Madison Avenue, New York.

Composition.—A processed mixture of barley malt, wheat flour and whole milk, reduced to powdered form.

Constituents

Fat	9.2%
Protein	15.5%
Lactose	13.5%
Maltose	35.6%
Dextrin	20.2%
Ash	3.8%
Moisture	2.2%
	100.0%

This average analysis varies slightly, though the butter fat content remains constant in order that the amount of butter fat may comply with the federal standard. Of the fat, 8.0 per cent is butter fat and 1.2 per cent cereal fat.

Process of Manufacture.—This was described in THE JOURNAL, March 8, 1930, p. 716.

Claims.—Borden's malted milk contains proteins, fat, carbohydrates, minerals and vitamins. It is easily digested.

MELLIN'S FOOD

Manufacturer.—Mellin's Food Company, Boston.

Definition.—Mellin's Food is a milk modifier.

Analysis of Food

Fat		.16
Proteins		10.35
Maltose	58.88	
Dextrins	20.69	
Soluble carbohydrates		79.57
Salts		4.30
Water		5.62
		100.00

Composition.—Mellin's Food is a soluble, easily digestible dry extract made from wheat flour, wheat bran, malted barley and potassium bicarbonate.

Process.—All of the starch in each of the cereals is transformed by the natural enzyme—malt diastase into the soluble carbohydrates, maltose and dextrins. The proteins of the wheat flour, wheat bran and malted barley, as well as the salts that form a part of the content of these grains, are retained and the potassium bicarbonate is added. By further manipulation and subsequent evaporation the whole is reduced to a dry powder which consists of maltose, dextrins, proteins and salts in definite proportions as given in the analysis.

Claims.—Mellin's Food is used as a milk modifier.

MELLIN'S FOOD BISCUITS

Manufacturer.—Mellin's Food Company, Boston.

Composition.—Contain a large percentage of Mellin's Food.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 12, 1930

BROADCASTING BUNK

The story of the development of radio broadcasting in this country reveals as sad a spectacle as is to be found in all the applications of governmental control to any of the features of modern life, not excepting prohibition and Volsteadism. Legislation is constantly some twenty-five to fifty years behind the discoveries of modern science and their application in daily life. When commercial broadcasting was first launched on the air, radio loudspeakers spewed forth the very dregs of nostrums, patent medicine, real estate, blue sky stock, and similar promotions. In time the radio broadcasters themselves sickened at the filth that passed over the air. The association of broadcasters began to control, through their own organization, some of the material offered to them for dissemination. When the Federal Radio Commission was organized it found a chaotic situation. Numerous individual stations had been licensed, some wholly for commercial purposes. Other stations were controlled by great newspapers, by public utilities, or by manufacturers of various products.

The legislation by which the Federal Radio Commission operates does not give it absolute powers. The commission does control the granting of licenses and it can, for cause, revoke a license. In the meantime the radio industry found it expedient to organize great chains, which really dominate the air during the periods they are in operation. It is difficult for individual stations to make themselves heard at the same time; even more important, however, the class of material offered over the chain is far superior in most instances because of the higher prices paid for entertainment and educational features. Thus only a limited number of people are likely to listen to features developed locally. Today most of the material coming into the home over the air is fairly sound from the point of view of truth; fairly safe from the point of view of preventing harm to the listener through trusting his health or his money or even his soul to some blue sky promotion in any of these fields; fairly nice from the point of view of morals, and fairly esthetic from the point of view of entertainment.

In a few spots over the United States local stations continue to pour forth filth and falsehood. In the obscure Kansas village of Milford, a blatant quack, one John R. Brinkley,[1] whose professional record reeks with charlatanism of the crudest type, has for some years been demonstrating the commercial possibilities of goatgland grafting for alleged sexual rejuvenation. Brinkley's educational history is as shady as his professional record. He has claimed two diplomas from Kansas City, Mo., schools—or alleged schools—one of them that was not recognized by the licensing boards of most states in the Union and long out of existence, and the other a notorious diploma mill. In one case he submitted as documentary evidence of his alleged attendance at an educational institution a document that was later shown to have been sold to Brinkley by an individual who declared, under oath, that the certificate was issued for a cash consideration without any examination and, although dated 1913, was actually sold several years later. On the basis of one of his diplomas, Brinkley obtained a license from the eclectic board of Arkansas—a board that figured largely in the diploma mill scandal—and, on the basis of the Arkansas license, obtained a license from Kansas by reciprocity.

Brinkley has been arrested, found guilty and sentenced to pay a fine and go to prison for selling "booze" and maintaining a public nuisance. He escaped the jail sentence and fine by being paroled by the judge of the Eighth Judicial District! Brinkley has been indicted in California for conspiring to violate the medical laws of that state, but escaped extradition because Governor Davis of Kansas refused to honor the requisition. Brinkley obtained an honorary degree from the Royal University of Pavia through unlimited effrontery. The degree was later annulled, but Brinkley continued to publish the statement that he was a "graduate, Royal University of Pavia." With unblushing impudence, he wrote the American Medical Association asking that his graduation-listing in the American Medical Directory be changed to show that he was a graduate of the Royal University of Pavia and not of the Kansas City outfit.

Brinkley, over his own broadcasting station, attempts to attract listeners by the kind of salacious innuendo concerning his methods that has brought millions to publishers of salacious periodicals. Far better might the United States Senate have concerned itself with such matters, than with its insistence that inspectors at our ports prevent the entrance into this country of Rabelais, Candide, or even the Decameron. At least the purchasers of those books know what they are getting, but in any home in the Southwest, the radio may snort into the family circle the news that Brinkley

1. A complete reprint of what has been published on the Brinkley quackery will be sent gratis to any one requesting it and accompanying the request with a stamped, addressed envelop.

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has reawakened the dormant sex desire of some ancient derelict by the injection of some giblet-like mixture of glands. More recently Brinkley has extended his commercialization of medicine—via the radio—by prescribing for his unseen and unknown audience, and then entering into a financial arrangement with druggists whose professional standards are, apparently, as low as his own. Thus broadcasts station KFKB of Milford, Kansas.

In Iowa at Muscatine, over station KTNT, broadcasts a business man named Baker who is selling a cancer cure, with cigars and a cheap magazine as side lines. His cancer cure includes the old Hoxsey [2] fake, originally promoted in Illinois, and apparently now resident also in Iowa. This nostrum for cancer is boomed by Mr. Baker over his radio station KTNT, which can be heard almost anywhere after 11 o'clock at night. This is exceedingly proper since it is the time of night when many devious and doubtful ventures are promoted. Over his privately controlled station Baker indulges in a repetition of much of the scandalous insinuation that proprietary manufacturers used back in 1905 when they first attempted to hinder the battle of the American Medical Association against the promotion of medical fraud.

Baker has even claimed that the American Medical Association offered him one million dollars for his cancer cure with the intent of forcing it from the market so that patients might be compelled to resort to surgery for the saving of their lives. The lie is so obviously false to any person with intelligence above that of a moron that it needs little thought to convince his hearers of its fallacy. Even if the American Medical Association had a loose million dollars lying around ready to be spent, it is quite certain that a number of better ways for spending it would occur to the trustees who are responsible for the funds of the Association. The income and the expenditures of the American Medical Association, which is a corporation not for profit, are regularly recorded and testified to by a competent firm of auditors. What is Mr. Baker doing with the money that he is snaring from the pockets of sufferers with cancer and wheedling from the funds of chiropractors, naturopaths, nostrum promoters and other medical malcontents?

The viciousness of Mr. Baker's broadcasting lies not in what he says about the American Medical Association but in the fact that he induces sufferers from cancer who might have some chance for their lives, if seen early and properly treated, to resort to his nostrum. The method can result in Muscatine, Iowa, as it did in Taylorville, Illinois—merely in death certificates signed by the physicians who have been so poor in finances and in morals as to sell their birthrights to Mr. Baker for his mess of garbage.

2. A Hoxsey quackery reprint will be sent gratis to any one requesting it and accompanying the request with a stamped, addressed envelop.

Every radio communication sent out is broadcast at the risk of the transmitting station. Its programs cannot lawfully be censored. The programs that have been broadcast may be used, however, in determining whether the station is one that is serving the public interest, convenience or necessity. No license can be issued by the Federal Radio Commission in the first instance until the Commission has determined that the station will serve the ends named. At any time while a license is in force, the Commission may require from the licensee written statements of fact to show whether the station is or is not still serving those ends. If such statements reveal conditions that would warrant the Commission in refusing to grant a license on an original application, the license may be revoked. It is primarily the public interest, convenience and necessity that the law seeks to protect. It is to the Federal Radio Commission that the public must look for protection.

If the Federal Radio Commission wants to merit public confidence it must find some way to curb this type of broadcasting. If the association of broadcasters wants to retain public respect it must assure the public that the average home will be protected against this type of promotion over what should be a safe means of education and entertainment. If the states of Iowa and Kansas cannot protect surrounding states against this effluvium which emanates from within their borders, they are indeed to be pitied for their weakness and condemned for their crime against the great American public.

"LIBERTY" AND ETHICS

Liberty is a publication owned and controlled by the group that publishes the Chicago *Tribune*. For some years the Chicago *Tribune* has had editorials urging that the medical profession discard its professional concepts relative to advertising and purchase space for carrying to the public the message of scientific medicine and the virtues of the medical profession. Now *Liberty* carries an article by one Grace Robinson, whose name does not appear in *Who's Who* or in any other guide to notable contributors to American Literature, in which the lady, though somewhat confused, endeavors apparently to convey the impression that the principles of ethics are planned primarily for the promotion of the interests of the physician and are opposed to the welfare of the public. The article, when read carefully, reveals that the very examples which the lady cites tend to confirm the real intent of the principles to protect the sick. Like many other uninformed writers, she thinks that the oath of Hippocrates is still the law of the medical profession. No doubt she thinks also that the Bible is the legal code of the United States. She does not realize that organized medicine constantly attempts to keep its principles and its practice abreast of changing social conditions and of the advancement of science.

Most of the article seems to be based on the arguments and notions of Dr. E. M. Josephson of New York. A reference to his publications and his correspondence indicates an apparent desire to crown himself the leader of what might be called, if one were exceedingly courteous, a Bolshevik movement in medical practice.

After all, is Grace Robinson, after a few hours of consideration of the principles of ethics and after the reading of a few pamphlets of criticism, really qualified to pass judgment on ethical principles that have come down through the ages? Does she realize that these principles were formulated by men whose life work has been the study of mankind and who have devoted themselves throughout their lives to humanity?

Every physician who has read the article finds it, to say the least, ridiculous in its disorganization, its lack of logic, and its distorted reasoning. The pity of it is that *Liberty* may cause some of its readers, through the mass impression of the presentation, to look with suspicion on scientific medical care. If they turn from scientific medicine, where can they go? Has Miss Robinson seen the principles of ethics of other organizations in the field of healing? Would it not have been better for her and the periodical which lends her its pages to have made some endeavor to secure accurate information before publishing such a pitiful diatribe? The great gods of *Liberty* seem to have been, from the first, circulation and advertising. Even now it carries medical copy which reputable publications reject. Indeed, most leading periodicals in this country would not consider even for a moment the copy of Hall's Catarrh Medicine, Weldona Tablets, Miles' Nervine, D.D.D., or many others carried by *Liberty*. Perhaps the present article is to be taken merely as a part of a continuing campaign to break down advertising standards.

VITAMIN D AND THE PARATHYROIDS

Interest in the physiologic activity of calcium has a long history, but only within comparatively recent years have some of the finer details of its biochemical behavior been determined. Since the greater part of the calcium of the body is in the bones, studies of their normal and abnormal development have yielded valuable information concerning this element. As a result, the inclusion of some source of vitamin D in the diet, the exposure to sunlight or to artificial ultraviolet rays, and strict attention to the quantity and proportion of phosphorus and calcium in the food are today accepted nutritional requirements for normal skeletal growth in young animals. Furthermore, there is a considerable mass of both experimental and clinical evidence that shows a close relationship between the parathyroid glands and calcium metabolism. It is striking that the level of calcium in the blood can be raised not only by the various therapeutic measures commonly employed in the treatment of rickets but also by the injection of active preparations of the hormone of the parathyroid gland. The fact that the concentration of this indispensable constituent of the blood plasma can be increased by two such apparently unrelated substances has raised the question of the possible rôle of the parathyroid gland in the measures ordinarily used in the cure of rickets, as well as the part played by the antirachitic factor in the development of the sequelae of parathyroidectomy.

While there are a number of recorded observations indicative of some relationship between the physiologic activity of the parathyroids and bone development, several recent studies bear specifically on this question. Higgins and Sheard[1] at the Mayo Clinic have shown that chicks grown in light from which the so-called vital rays have been removed invariably exhibit a hyperplasia of the parathyroids. This overgrowth can be prevented in these animals by subjecting them to direct irradiation containing the ultraviolet portion of the spectrum or by administering cod liver oil. That the development of the well known hypercalcemia following large doses of viosterol is conditioned by the normal activity of the parathyroid glands is indicated by the observations of Hess, Weinstock and Rivkin.[2] They found that, in both dogs and monkeys, overdosage (forty times the therapeutic dose) with viosterol failed to increase the concentraton of calcium in the blood after parathyroidectomy. The most recent contribution to this theme is the study of Morgan and Garrison,[3] who reversed the experimental procedure. Using young dogs, these investigators examined the power of parathyroid extract to raise the blood calcium level as affected by simultaneous presence of vitamin D in the body of the experimental animal. With diets otherwise adequate, a deficiency in the antirachitic factor prevented the hypercalcemia usually observed following the injection of parathyroid extract. When both viosterol and parathyroid extract were given, extremely high concentrations of serum calcium were observed.

The experimental data just cited indicate that the increases in calcium of the blood regularly induced by administration both of viosterol and of parathyroid extract may not be independent phenomena but may actually be more or less directly interrelated. The analogous connection existing between iodine and the thyroid gland renders such a possibility less unlikely. These studies further emphasize the extreme complexity of most biochemical reactions which, because of their familiarity, often appear simple. Perhaps the occasional failure in the clinic of such ordinarily efficacious antirachitic agents as cod liver oil and viosterol can be attributed to a glandular deficiency not

1. Higgins, G. M., and Sheard, Charles: Am. J. Physiol. **85**: 299 (June) 1928.
2. Hess, A. F.; Weinstock, Mildred; and Rivkin, Helen: Proc. Soc. Exper. Biol. & Med. **26**: 555 (April) 1929.
3. Morgan, A. F., and Garrison, E. A.: J. Biol. Chem. **85**: 687 (Feb.) 1930.

apparent at the time. It appears that this suggestive correlation between the activity of vitamin D and the parathyroids may be a significant beginning in elucidating the finer details of the mode of action of the antirachitic potency.

Current Comment

WILLIAM H. WELCH

On April 8, the eightieth birthday of Dr. William H. Welch was duly celebrated with a public meeting in Washington, broadcast throughout the world by special arrangement. The life of Dr. Welch covers the whole era of modern bacteriology. He witnessed the coming of the discoveries of Pasteur and Koch, and was a leader in the dissemination of that knowledge and of its application to the control and prevention of infectious disease. He aided in the correlation of the fundamental sciences as a basis for the teaching of modern scientific medicine. Hundreds of contributions to medical periodical literature indicate the breadth of his efforts. Even at eighty he is founding a new school in the history of medicine in the Johns Hopkins University School of Medicine. His career has been significant in the advancement of medical science, and the honors done him are merited to the fullest extent.

TULAREMIA IN RUSSIA

Repeated epidemics in the Union of Socialist Soviet Republics indicate that tularemia is widespread in Russia. It has been investigated since 1927-1928 by the plague section of the government epidemiologic and microbiologic institute at Saratov. A thousand and seventy-six cases have been reported in four centers, as compared with seven hundred cases in America. In a report to the Health Section of the League of Nations by Roubakine,[1] attention is called to the fact that tularemia in rodents has been confounded with plague and that symptoms in men have been confused with sodoku. Differential diagnosis, especially between tularemia, a benign disease, and a serious condition such as plague, is important. Both diseases are transmitted through rodents, both form buboes, and both are found in similar sections of Russia. The interesting fact was noted by Francis and by Alice Evans that animals immunized against the organisms of tularemia develop in their blood agglutinins for *Bacterium tularense, Brucella abortus* and *Brucella melitensis.* The Russian investigators believe that there are no grounds for classifying *Bacterium tularense* in the melitensis group but that a far greater analogy exists between *Bacterium tularense* and Yersin's bacillus because of their transmission by rodents with insects as the intermediary. McCoy and Chapin immunized a guinea-pig against plague and inoculated tularemia; the animal died, exhibiting the typical symptoms of tularemia. Immunization against plague evidently affords no protection against tularemia. American investigators have not discovered any specific serologic treatment of the disease, and immunizing experiments were not carried out by the Russian authors.

1. Roubakine, Alexander: Tularemia, Monthly Epidemiological Report, League of Nations **9**: 3 (Jan. 15) 1930.

DEMAND AMENDMENT OF PORTER NARCOTIC BILL IN SENATE

The House of Representatives, April 7, passed without amendment the Federal Narcotic Service Reorganization Bill, H. R. 11143, introduced by Representative Porter, March 26, and reported by the Committee on Ways and Means, March 31. THE JOURNAL, April 5, advised physicians to protest to their Representatives in Congress against the enactment of this bill, unless amended, but it has been jammed through the House of Representatives in such short order as to make such protests ineffective. The bill should be amended in the Senate to authorize importation by accredited laboratories, for use in research, of the rarer derivatives of opium and coca leaves that are not manufactured in the United States. It is even more important that it be amended to require the federal narcotic service to cooperate with the states in enforcing state laws relating to narcotic drugs. Without such an amendment the bill menaces the medical profession with a federal narcotic dictator, who may assume charge of the practice of medicine so far as relates to the professional use of narcotic drugs. Forcible protests should be sent immediately to every Senator by telegram and by letter, so that he may not vote on this bill without full knowledge of the views of the physicians of his state.

CUTANEOUS BACTERIOLYSINS

That human skin is more than a mere mechanical protection against invasion by pathogenic microorganisms, that it possesses biochemical defenses rivaling those of internal tissues, is a fundamental immunologic fact but recently demonstrated. Singer and Arnold[1] of the Research Laboratory, State Department of Public Health, Chicago, carefully cleaned human skin with soap and water and then applied broth cultures of numerous common nonpathogenic and pathogenic micro-organisms. Among the microorganisms thus applied were *Bacillus prodigiosus, B. pyocyaneus, B. coli, B. typhosus* and various strains of staphylococcus. Fully 90 to 95 per cent of all bacteria thus applied were killed within ten minutes.

1. Singer, C., and Arnold, L. L.: Autodisinfecting Power of the Human Skin, Proc. Soc. Exper. Biol. & Med. **27**: 364 (Feb.) 1930.

Micro-organisms of the colon-typhoid group were destroyed rapidly, pyogenic cocci relatively slowly. These results were obtained only with clean skin. With dirty or fatty skins the same micro-organisms often survive, living bacteria being demonstrable for many hours after control clean areas had become sterile. The finger-nail region, particularly, was defective in the normal cutaneous self-disinfecting power. The mechanism of cutaneous autodisinfection has not yet been determined. The possibilities of assisting this hitherto unrecognized biochemical defense by local and constitutional therapy, and the dangers of reducing, inhibiting or destroying normal cutaneous bacteriolysins by other methods of treatment, suggest fertile fields of practical research.

Association News

ANNUAL CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

Twenty-Sixth Annual Meeting, held in Chicago, Feb. 17, 18 and 19, 1930

(Continued from page 1075)

COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 18—AFTERNOON

PHYSICAL THERAPY

Physical Therapy in Army Hospitals

DR. MERRITTE W. IRELAND, Washington, D. C.: Physical therapy began when earliest man rubbed his bruises. Later this rubbing was developed into scientific massage, and along with massage was evolved muscular training and muscle reeducation. Hydrotherapy may be said to have begun with man's first bath, and history is replete with reference to the therapeutic effect of the waters of various rivers. Electrotherapy dates back to the first century A. D., when shocks from the torpedo fish were recommended as cures for severe headaches.

Notwithstanding the venerable age of physical therapy and its many worthy uses, it gradually fell into disrepute, and at the time of our entry into the World War practically no instruction in this subject was given in any of the medical schools. During the World War the urgent need of returning the wounded rapidly to the front lines or of rehabilitating them sufficiently for noncombatant duty brought about what might be termed the rebirth of physical therapy. For the vast work of reconstruction it was necessary to secure trained personnel. Medical personnel, commissioned and enlisted, was hastily trained, all available physicians who had had experience in any of these branches being utilized. Reconstruction aides in physical therapy were appointed. These were young women who were well trained in their occupation. They either were graduates of normal schools of physical education or were college graduates who had majored in physical education; in addition, before being accepted by the army, they were given six weeks' intensive training in physical therapy. By the end of 1919 there were 815 physical therapy aides in the military hospitals.

After the war the necessity for this branch of work as an aid in convalescence from both injury and disease was recognized. For this reason the physical therapy work at Walter Reed General Hospital was continued and today that institution possesses one of the best equipped clinics of its kind in the United States. A course for the training of aides in physical therapy was established at Walter Reed General Hospital in 1922. This course is offered to young women who are graduates of schools of physical education or who have majored in physical education in universities or colleges. The course of study is divided into two sections. The first section consists of theoretical instruction, which includes lectures, demonstrations and practice work in the administration of physical therapy treatments. The instructors for this work are head aides in the physical therapy department. After three months spent in theoretical instruction, the students are given three months of practice work in the actual treatment of patients, under supervision, using the various methods comprised in the term physical therapy. Each student is required to gain experience in treating every type of case, both in the wards and in the physical therapy clinic. The second section of the course comprises lectures in clinical medicine and surgery, for which lectures the students in physical therapy join with the students in the Army School of Nursing. On graduation aides are appointed to vacancies in our army hospitals. This method has given the army uniformly well trained personnel. Interns, while not assigned to the physical therapy department, are in a position to observe the results attained and are able to evaluate the various physical therapy procedures.

The physical therapy clinic at Walter Reed General Hospital has a well rounded gymnasium for the treatment of patients needing muscle reeducation and training in coordination. Here not only orthopedic but cardiac cases are treated as well as some postoperative cases needing graduated exercises. Many of the nervous and mental patients are given class work in coordination, including the playing of games under close supervision. In addition there is a well equipped hydrotherapy room for various types of baths, and a cabinet bath room, where four patients may be treated at one time. The whirlpool room is equipped with three whirlpool baths for the treatment of legs and two baths for arms. In the electrotherapy department are installed the most up-to-date high frequency and low voltage machines, allowing for the treatment of twelve patients at a time. Two rooms are equipped for ultraviolet irradiation; one room contains a high amperage carbon arc light and the other room contains two air-cooled mercury vapor arc lights. The thermotherapy department is equipped with apparatus for treating patients by means of radiant heat, light and infra-red rays. The massage department completes the clinic proper and provides for both massage and treatments by mechanical vibration. In addition to treatments given in the clinic proper, this department has the following facilities for ward treatments: Three portable high frequency machines for giving diathermy in cases of pneumonia and other cases requiring such treatment; one portable mercury vapor arc light for irradiation of patients in bed, and a large assortment of portable apparatus for giving both radiant heat and light and infra-red ray treatments. Massage and exercises are given to bed patients as indicated.

Outside of the Walter Reed Hospital, physical therapy has been developed to a greater extent at the Army and Navy General Hospital, Hot Springs, Ark., than at any other of our army hospitals. While at the time of the establishment of the Army and Navy General Hospital it was intended primarily for those patients who could be expected to be benefited by the waters of Hot Springs, it is today a full-fledged general hospital, treating all types of cases except tuberculosis and mental diseases.

The Teaching of Physical Therapy

DR. IRVING S. CUTTER, Chicago: It is a matter of comment among well trained medical graduates that somehow or other instructors lack interest in therapeutic measures, and particularly do they lack resourcefulness in their application. The patient desires to get well, and while the diagnosis is all-important, the management of the patient's condition must receive adequate attention. If we assume that physical therapy is of demonstrated value, educational institutions having the responsibility of training physicians must teach the possibilities and limitations of this form of therapy rather than permit manufacturing concerns to provide this instruction. Considerable discredit has been brought to the entire field by the exaggerated claims of manufacturers through unsound sales propaganda. Those who have used physical therapy as a part of modern therapeutics, in an intelligent and scientific manner, are convinced not only that this form of therapy should be applied for the benefit of certain disease entities but that the teaching of its proper uses and possibilities should be a part of the medical curriculum.

Instruction in physical therapy must be designed first to reach the great body of physicians. This may be accomplished through several avenues. The first is through periodical literature, for by this means the entire membership of the profession may be reached. It is therefore incumbent on teaching clinics involving physical therapeutic procedures to produce a literature that will be instructional on a sound scientific basis. The second form of instruction is extension courses designed to aid the general practitioner in the city where no school or teaching clinic is located. The physical therapy department at Northwestern University has conducted three courses of this character—one at Tulsa under the auspices of the University of Oklahoma, one at Kansas City under the auspices of the University of Kansas, and one in Seattle under the auspices of the University of Washington. The department has further cooperated with these universities in maintaining an abstract service of recent literature. Every two months each interested physician receives an abstract of from twelve to fourteen scientific articles on physical therapy that have appeared in standard medical journals.

The third means of instruction is through courses of approximately one month's duration, given at centers where physical therapy is taught, open to practitioners of medicine. In this course the physician is brought into actual case contact, where the physical and biophysical principles involved are fully demonstrated. Hospitals may aid in the postgraduate instruction of physical therapy by (1) the assignment of interns to the physical therapy department; (2) the assignment of physical therapy topics for discussion at staff meetings; (3) hospital clinics, and (4) instruction of hospital executives.

The recent report of the Council on Physical Therapy recommends that interns should be encouraged to take an active interest in this subject. This can best be accomplished by definitely assigning the intern to the physical therapy department to see and prescribe for new cases sent to the department.

In teaching physical therapy to undergraduate medical students, the subject must be emphasized not as a specialty but as a part of general medicine. The subject must be coordinated so that it will be not independent but connected and correlated with the whole field of medicine. More instruction in physical therapy should be required in each training school for nurses. Courses designed to train physical therapy technicians should not be less than one academic year, and should, if possible, be given in a medical school and in its affiliated hospitals. The curriculum for physical therapy technicians is given in the recent Council report.

Occupational therapy is a part of the treatment by physical agents, and technicians in this work must have a thorough training, particularly in human anatomy and in psychology. As these technicians have had no hospital training as nurses, it is important that they receive instruction in medical ethics, the keeping of records and charts and the administration of an occupational therapy department in a hospital. A great essential in this training is at least nine months of practical work and this should be so varied as to include work in several hospital departments, including (1) certain types of mental cases, (2) tuberculosis, (3) orthopedic cases, (4) industrial injuries, and (5) medical cases such as heart failure. The admission requirements and a suggested curriculum were recently published in the Council report. The Council on Physical Therapy of the American Medical Association has given much thought and attention to the subject with the result that medical schools, hospitals and educational institutions generally are being urged to supply the type of education and training required. American medicine must take unto itself this added instructional burden.

The Administration and Planning of the Hospital Physical Therapy Department

DR. WILLIAM H. WALSH, Chicago: Physical therapy may now be said to be an essential division of the hospital's activities. The one in charge of such a department must be an exceptionally able person. In planning new hospitals, efforts are made to coordinate all of the elements of physical therapy, so that it may be possible for one director to control all of the units. There seems to be no good reason why the roentgenologic and physical therapy departments, as well as occupational therapy and radium therapy, cannot be placed in charge of one director, provided one qualified can be secured.

Because of the failure of medical schools in the past to provide adequate instruction in physical therapy, a considerable proportion of the older physicians have a very hazy knowledge of the potentiality of these elements, but if properly approached they are likely to defer to the superior knowledge of one who is specializing in this particular subject. Plans for physical therapy departments differ widely with the locality, the size of the hospital and the personnel; before such a department is planned, it is necessary to have a clear knowledge of the function of the hospital and the type of cases treated.

Physical Therapy from the Standpoint of a Practitioner

DR. JOHN S. COULTER, Chicago: In physical therapy the agents of the greatest use are heat, light, water, massage and exercise. Of all therapeutic adjuncts these are the simplest, the most flexible, the most easily obtainable, and the cheapest. Can the general practitioner use these physical agents? He can. Does he need elaborate and expensive apparatus? He does not. But it is essential that he know their use and be able to prescribe them for his patients as he does drugs. In prescribing heat the physician has an excellent guide in an article published by the Council on Physical Therapy on "The Influence and Therapeutic Use of Heat." Light or ultraviolet radiation can also be used by every general practitioner. Next in the list of simple remedies available to every physician, and this one without cost to the physician or patient, is water. The average medical student knows much of the etiology, diagnosis and pathology of the diseases causing fever, but few can give definite instructions for the use of hydrotherapy in its control. Little is taught the medical student while in school, and while he is in the hospital as an intern a nurse gives only the necessary sheet or other baths. Thus, when the physician is out in general practice, the use of hydrotherapy is often neglected because the physician cannot give the necessary directions for its use.

Another available physical agent is massage, which is the oldest physical procedure known to the medical profession. Every physician should know the elementary principles of massage, and the Council on Physical Therapy is soon to publish an article on this subject. The last on the list of simple and cheap physical agents is exercise. Exercise is essential in any health program. A physician should prescribe exercise in the same manner as any other drug or measure.

DISCUSSION ON PAPERS OF DRS. IRELAND, CUTTER, WALSH AND COULTER

DR. HERMAN SMITH, Chicago: Occupational therapy and physical therapy should definitely be combined. Physical therapy should not be left in the hands of technicians. Tying it up with the orthopedic service, getting the physical therapeutist to have the help of the orthopedists and other medical men, particularly the surgeons, is of the utmost importance. Physical therapy has its limitations. Physical therapy has enough before it at present to establish itself as a real entity without attempting to take on anything else. Cardiography and metabolism and the other special features, as well as roentgen therapy, have their own particular problems, and I think it is almost an impossible task to attempt to get one man who will be master of all subjects. There is a definite possibility, to my mind, if that is attempted, that not only physical therapy but perhaps some of the others that would be combined might fall into disrepute and more harm than gain would result. One is forced to conclude that we should go slow with the entire development of physical therapy in order that hospital administrators and the staff shall not become dissatisfied with it. While we are all agreed that sufficient space in any hospital planning should be set aside for the ultimate development of such a department, I think it only fair for the profession itself to go slowly, particularly in a new plant, in putting in a large amount of equipment and fitting out these rooms until every one is actually convinced that such a department is absolutely needed. Speaking of the ordinary type of general hospital where industrial surgery is not the major factor, one is forced to the conclusion, I believe, that we should make haste slowly.

(To be continued)

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MEDICAL BROADCAST FOR THE WEEK

American Medical Association Health Talks

The American Medical Association broadcasts daily at 10 o'clock, Central Standard Time, with the exception of Tuesday, when the health message is delivered at 10:30, and Friday, at 9:45, over Station WBBM (770 kilocycles, or 389.4 meters).

The program for the week of April 14-19 is as follows:

April 14. Care of the School Child's Health.
April 15. Exercise for the Preschool Child.
April 17. When Johnny Breaks His Arm.
April 18. The Place of Sugar in the Diet.
April 19. Billiousness.

Five minute health talks may be heard over the Columbia Broadcasting System daily from 12 noon to 12:05 p. m.

The program for the week is as follows:

April 14. History Measures the Medical Milestones.
April 15. Cinderella Goes Shopping.
April 16. Health the Most Important Business on Earth.
April 17. When Left is Right.
April 18. Our Burnt Offerings to King Tobacco.
April 19. Can They Swim?

THE DETROIT SESSION

Alumni Reunions

It is suggested that any Fellow desiring to make arrangements for alumni or fraternity reunions or meetings communicate with Dr. Raymond C. Andries, 1737 David Whitney Building, Detroit, concerning facilities for such gatherings.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

State Medical Meeting at Montgomery, April 15-18.—The sixty-third annual meeting of the Medical Association of the State of Alabama will be at Montgomery, April 15-18, with headquarters at the Whitley Hotel, and under the presidency of Dr. Louis E. Broughton, Andalusia. Many Alabama physicians will participate in the program. The guest speakers will be Dr. Luther L. Hill, Jr., New Orleans, on "Syphilis of the Stomach"; Dr. Paul H. Ringer, Asheville, N. C., "Diagnosis and Rest: Two Essentials in Overcoming Pulmonary Tuberculosis"; Major George A. O'Connell, Fort Leavenworth, Kan., "Maxillary Sinusitis"; Dr. Henry D. Bruns, New Orleans; Dr. Benjamin Franklin Royer, New York, "Prevention of Blindness"; Dr. Dennis R. W. Crile, Chicago, "Fractures"; Dr. James Harold Watkins, New Orleans, "Epidemic Meningococcus Meningitis," Dr. William Weston, Columbia, S. C., "Foods and Their Relation to the Pediatric Problem"; Dr. Noel C. Womack, Jackson, Miss., "Secondary Anemias in Children"; Dr. Thurston D. Rivers, Chicago, "Proper Use and Selection of Diuretics." Dr. Walter E. Sistrunk, Jr., Dallas, Texas, will deliver the Jerome Cochran Lecture. Wednesday, there will be a reception for the president and the past presidents, twenty-one of whom are living. Dr. and Mrs. Robert S. Hill will entertain the physicians and their wives on Thursday, at a barbecue. Members of the state association are invited to be present on Wednesday at the unveiling of a bronze tablet marking the site of Dr. J. Marion Sims' office and infirmary; the Montgomery County Medical Society will place the tablet.

ARIZONA

State Medical Meeting at Phoenix, April 24-26.—The thirty-ninth annual meeting of the Arizona State Medical Association will be at Phoenix, April 24-26, with headquarters at the Hotel Westward Ho, and under the presidency of Dr. Samuel H. Watson, Tucson. The governor of Arizona will deliver the address of welcome. Dr. Charles C. Tiffin, Seattle, will speak on "Surgical Treatment of Goiter." A symposium on industrial medicine and surgery will be presented by Drs. John E. Bacon and William B. Watts, Jr., Miami; John W. Flinn, Prescott; Alfred C. Kingsley, Phoenix; Charles N. Ploussard, Phoenix, and William Lisle Bell, Oakland, Calif. The symposium on the chest will be given by Drs. Allen K. Krause, Charles S. Kibler, Samuel H. Watson, James L. McKnight and William R. Leverton, all of Tucson; Victor S. Randolph, William W. Watkins and O. C. West, Phoenix, and Clarence E. Yount, Prescott. The speakers at the session, Saturday, will be Drs. Charles T. Sturgeon, Los Angeles, on "Pulsion Diverticulum of the Esophagus"; Francis M. Pottenger, Monrovia, Calif., "The Explanation of Symptoms"; Harry A. Reese, Yuma, "Fever"; Harry T. Southworth, Prescott, ovarian hematomas of the endometrial type, and Arthur C. Carlson, Jerome, "Volkmann's Ischemic Contracture." The Arizona Public Health Association will hold its third annual meeting at Phoenix, April 22-23, under the auspices of the state board of health.

GEORGIA

University News.—More than a quarter of a million dollars has been subscribed to the centennial memorial building fund of the Medical Department of the University of Georgia for the erection of a building to commemorate the one hundredth anniversary of the founding of the medical school by Dr. Milton Antony in 1823. The fund is still short $40,000 of the amount set as a goal.

Society News.—Dr. David Henry Poer addressed the Fulton County Medical Society, Atlanta, April 3, on "Indications for and Results of Removal of the Spleen."——The Sumter County Medical Society was addressed, March 6, by Dr. Isham W. Irvin, Albany, on "Symptoms, Diagnosis, and Removal of Foreign Bodies from the Trachea and Bronchi."——Dr. Charles E. Dowman addressed the Atlanta Neurological Society, recently, on "Localizing Diagnosis in Brain Tumor—Phenomena Which May Be Misleading."

KANSAS

Society News.—The Montgomery County Medical Society was addressed at Independence, February 21, by Dr. Ray M. Balyeat, Oklahoma City, on the diagnosis and treatment of allergic diseases.——A symposium on obstetrics was held before a joint meeting of the Franklin County and the Leavenworth County medical societies at Lawrence, March 28; the speakers were Drs. Hobart K. B. Allebach, Ottawa; Harley J. Stacey, Leavenworth; John T. Kimsey, Lathrop, Mo., and Clarence B. Francisco, Kansas City, Mo.

Dr. Barker Gave the Porter Lectures.—The first course of lectures under the Porter Lectureship in Medicine of the University of Kansas School of Medicine, was delivered, April 1-2, at the Bell Memorial Hospital by Dr. Lewellys F. Barker, emeritus professor of medicine, Johns Hopkins University School of Medicine, Baltimore. The subjects of the lectures were "Diagnosis and Treatment of the Commoner Personality Disorders"; "Psychology and Medicine," and "Diagnosis and Treatment of the Commoner Personality Disorders."

KENTUCKY

Bills Enacted.—The following bills have become laws: Senate bill 383, amending the law regulating the practice of optometry by providing for the revocation of the license of any optometrist who practices as an itinerant pedler; H. B. 326, authorizing cities of the first class to construct public hospitals, and H. B. 404, creating the office of state supervisor of chiropractors, to be held by one of the members of the board of chiropractic examiners.

MARYLAND

State Medical Meeting at Baltimore, April 22-23.—The annual meeting of the Medical and Chirurgical Faculty of Maryland will be in Baltimore, April 22-23, under the presidency of Dr. Henry M. Fitzhugh, Westminster, who will speak on "Health Departments and Clinical Medicine." Dr. Willard C. Rappleye, director of study, commission on medical education, New Haven, Conn., will deliver the Trimble lecture on "Medical Economics." Other speakers will be Drs. Frank S. Lynn, on "The Diabetic from a Surgical Point of View"; Ernest S. Spencer, Stewart Paton, New Haven, Conn., "The Prohibiting Mania"; James H. Mason Knox, Jr., "Maternal Deaths," and David M. Davis, "Resection of the Kidney." The Wednesday meeting will be addressed by the governor of Maryland, and Dr. William H. Welch. At the centennial celebration of the library, the speakers will be Archibald Malloch, librarian, New York Academy of Medicine; Dr. Lewellys F. Barker, Dr. Irving S. Cutter, dean, North-

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western University Medical School, Chicago, and Dr. Joseph Collins, New York. There will also be a presentation of the portrait of Dr. James Chisolm by Dr. James J. Carroll.

MASSACHUSETTS

Hospital News.—The four buildings occupying the site selected for the new Boston Floating Hospital are being razed. The proposed building will be a forty-bed hospital and will specialize in the care of babies and research in children's diseases.

MICHIGAN

Society News.—The Oakland County Medical Society, Pontiac, was addressed, February 20, by Drs. George A. Sherman and Robert H. Baker on "Multiple Neurofibromatosis"; Dr. Edward V. Howlett, "Traumatic Paralysis"; Dr. Harold A. St. John, "Toxemia of Pregnancy," and Dr. Leon F. Cobb, "Prostatic Hypertrophy."——The St. Clair County Medical Society was addressed, March 4, by Dr. Jean P. Pratt, Detroit, on "Endocrine Therapy of Amenorrhea and Metrorrhagia."——The Wayne County Medical Society, Detroit, was addressed, March 18, by Dr. Frank Smithies, Chicago, on "Gastric Hemorrhages."——The Wayne County Medical Society was addressed, April 1, by Dr. Henry R. M. Landis, Philadelphia, on "Tuberculosis."——The medical section of the Wayne County Medical Society was addressed, April 8, by Dr. Walter M. Simpson, Dayton, Ohio, on "Undulant Fever—A Clinical Pathologic Study of 100 Cases." A course in medical economics will be given to members of the society during April and May.——Dr. Clark D. Brooks, Detroit, addressed the Ingham County Medical Society at Lansing, March 18, on "Gallbladder Surgery."——Dr. Frederick C. Warnshius, Grand Rapids, addressed the Highland Park Physicians' Club, April 3, on "Organized Medical Activities," and Dr. Edward J. O'Brien, Detroit, on "Surgical Treatment of Pulmonary Tuberculosis."——The Kalamazoo Academy of Medicine was addressed, March 18, by Dr. James E. Davis, Ann Arbor, on "Correlation of Clinical and Pathologic Renal Changes."——Moving pictures demonstrating movements of the alimentary tract in experimental animals, the influence of drugs on gastro-intestinal motility, the anatomy of the abdominal wall and male reproductive organs, comprised the program of the Oakland County Medical Society, March 20.——Dr. Claire L. Straith, Detroit, presented a paper before the London Academy of Medicine and the faculty and student body of the Western Ontario Medical School in London, April 11, on "Plastic Surgery of the Face."——Drs. Alfred H. Whittaker and Ledru O. Geib, Detroit, will address the Jackson County Medical Society at Jackson, April 22, on "Detroit's Toxin-Antitoxin Campaign."

MINNESOTA

Society News.—The Minnesota Academy of Medicine was addressed, April 9, at Minneapolis, by Drs. Edward V. Goltz, St. Paul, and Emil C. Robitshek on "Primary Carcinoma of the Lungs and Bronchi" and "Acute Perforated Peptic Ulcer," respectively. The academy was addressed, March 12, by Dr. William F. Braasch, Rochester, on "Congenital Failure of Renal Rotation and Associated Anomalies."

Boyd T. Williams Fined.—Boyd T. Williams, M.D., Minneapolis, paid a fine of $250 to the clerk of the district court of Hennepin County, March 24, having been convicted by a jury of practicing without a basic science certificate. Williams pleaded guilty to the same charge, Feb. 21, 1928, and was fined $100. Williams has long conducted a "cancer sanatorium" in Minneapolis, although he has never been licensed to practice medicine in Minnesota. From information on file (THE JOURNAL, March 17, 1928, p. 861), it appears that he uses caustic paste in the treatment of cancer.

Symposium on the Kidney.—The University of Minnesota Medical School has issued invitations to a symposium on the kidney in health and disease to be held in Minneapolis, July 7-18. It is an attempt at correlation of views on account of the high degree of specialization that is associated with intensive scientific development. Participating in the program will be Prof. F. Volhard, Frankfort-on-the-Main; Dr. G. Carl Huber, University of Michigan Medical School, Ann Arbor; Dr. A. J. Carlson, Chicago; Dr. Eli K. Marshall, Jr., Baltimore; Richard E. Scammon, Ph.D., Minneapolis; Dr. Clarence M. Jackson, Minneapolis; Dr. Elexious T. Bell, Minneapolis; Dr. Harvey L. White, St. Louis; Dr. Raymond N. Bieter, Minneapolis; Dr. Warfield T. Longcope, Baltimore; Dr. Poul B. Rehberg, University of Copenhagen; Dr. Leonard G. Rowntree, Rochester, Minn.; Dr. Hilding Berglund, Minneapolis; Dr. Arthur D. Hirschfelder, Minneapolis; Dr. Louis Leiter, Chicago; Ross A. Gortner, Ph.D., Minneapolis; Dr. Henry P. Wagener, Rochester; Dr. Macnider Wetherby, Minneapolis; Dr. George E. Fahr, Minneapolis; Dr. Norman M. Keith, Rochester, Minn. An excursion will be made, Monday, to the annual meeting of the Minnesota State Medical Association in Duluth with addresses by Professor Volhard and Dr. Longcope.

MISSISSIPPI

Bill Enacted.—House bill 115, prohibiting the possession or transportation of Jamaica ginger, elixir of orange peel or pear extract, has become a law.

Society News.—The Issaquena-Sharkey-Warren Counties Medical Society was addressed, April 8, by Dr. Edwin P. Hall, Vicksburg, on "Simulation of Visceral Lesions by Neuralgia of the Nerves Supplying the Abdominal Wall," and Dr. Henry S. Goodman, Cary, "My Experiences with Eclampsia in Country Practice." Dr. Hugh A. Gamble, Greenville, president of the state medical association, also addressed the society.

NEBRASKA

Society News.—A clinical program comprised the April 8 meeting of the Omaha-Douglas County Medical Society; among the speakers were Dr. Earl A. Connolly on "Skin Grafting by Implantation," and Dr. Edwin C. Henry, "Recurrence of Gallstones in the Common Duct Following Cholecystostomy." A motion picture demonstration on heliotherapy will be given, April 22, by Dr. Alexis M. Forster, Colorado Springs.——Dr. Arthur L. Smith, Lincoln, gave an illustrated address on "Tachycarditis" before the Dawson County Medical Society, April 4; every regular physician in Dawson County is now a member of the society.

NEW JERSEY

Society News.—The Bergen County Medical Society was addressed, recently, by Dr. John T. Howell, Jr., New York, on "Anemia in Childhood" and by Dr. George M. Levitas on "Appendicitis in Children."——Dr. Andrew F. McBride, Paterson, addressed the Essex County Medical Society, February 13, on "The Compensation Act in Its Relation to Doctors and the Practice of Medicine."——The Mercer County Medical Society was addressed, February 12, by Dr. Henry L. Bockus, Philadelphia, on "Hemorrhage in the Upper Abdomen."——Dr. Temple S. Fay, Philadelphia, addressed the Atlantic County Medical Society, March 14, Atlantic City, on "Head Injuries." Dr. Clyde W. Collings, New York, addressed the society, April 11, on "Modern Methods in Urologic Surgery," with lantern slide demonstration.

NEW YORK

Bills Introduced.—Senate bill 1792 proposes to amend that portion of the medical practice act regulating the practice of physical therapy by allowing the holder of a license to practice physical therapy to treat diseases without the supervision of a physician. Senate bill 1725 proposes to create a bureau of milk control and inspection.

Study of the Feebleminded.—The Children's Aid Society of Buffalo, in a recent intensive study of 136 feebleminded persons discharged from the Rome State School over a period of twenty years, ascertained that only eight had made satisfactory adjustments to community life and eleven others had made fairly satisfactory adjustments. The report suggests the establishment of an industrial plant where feebleminded children, trained in special classes for certain lines of work, may find employment on a wage basis.

Olean Pays for Typhoid Epidemic.—The common council of the city of Olean, which has already expended proceeds of a $350,000 bond issue in the payment of claims arising from the typhoid epidemic in 1928, recently requested permission of the New York state legislature to bond the city for an additional $75,000 in the form of twenty year bonds. It is reported that this action was taken in order to avoid litigation in view of the pressing necessity of closing the claims of persons with whom the city has never made satisfactory settlement. In assuming complete liability for the epidemic, which was traced to pollution of the public water supply, the city has held itself liable for all medical and nursing care, and loss of time and life as a result of 212 cases and at least eighteen deaths.

New York City

Seventh Harvey Lecture.—Winthrop J. V. Osterhout, Ph.D., Rockefeller Institute for Medical Research, will deliver the seventh Harvey Society Lecture at the New York Academy of Medicine, April 17, on "Electrical Phenomena in the Living Cell."

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 22, 1930.

Withdrawal of Recognition of Indian Degrees by the General Medical Council

The holders of the degrees of the Indian universities (Bombay, Calcutta, Lucknow, Madras and Punjab) have been admitted to the British medical register exactly like British physicians. But for ten years the general medical council (the official body which sits in London and controls medical education and registration) has called attention to deficiencies in Indian medical education. The council showed so much patience because it desired to help the Indian medical colleges to overcome their deficiencies. Sir Norman Walker, chairman of the examination committee of the council, has visited India and an experienced officer of the Indian Medical Service was appointed inspector of Indian medical education, on whose reports recognition of the Indian degrees was conditionally continued. Both advised the Indian educational authorities with a view to reforms and to a better arrangement than conditional recognition from year to year. But the rise of nationalism in India has increased the difficulties, and apathy in the legislative assembly has been replaced by a spirit of resistance. It should be noted that the council has no jurisdiction in India but it has both power and responsibility as regards the admission of Indian graduates to the British medical register, which gives them the same rights of practicing in Great Britain as British physicians have. In 1928 the president of the council said in his address: "Our primary interest is that Indian medical degrees shall guarantee a standard of proficiency sufficient for practice in this country. It is this interest, which we cannot forego, that alone justifies our interference in Indian medical education." The Indian medical colleges were established by the British government and until recently were staffed by the officers of the Indian medical service, who were almost entirely British. Thus the medicine of the West was introduced into the East. But, with the large measure of autonomy recently given to India, the Indian colleges have passed under the control of the provincial Indian governments, which have a large measure of independence. The result has been a considerable replacement of European by Indian teachers and in two colleges there are no Europeans. The defect in midwifery training has caused the greatest trouble with the British medical council. It is largely due to the purdah custom (the seclusion of women), which limits opportunities for obstetric instruction. But though the object of the council was to give advice which would raise the Indian colleges to the requisite level, its advice was not received in the proper spirit. In 1924, Calcutta University refused to admit the council's inspector to its examinations. The university was warned that, in the absence of a report, recognition would be withdrawn, and this took place. Then the university approached the council, stating that it had revised its regulations, and inspection was resumed with the result that recognition was restored. Another trouble with Indian medical education was that the various colleges were entirely uncoordinated, each pursuing its own course and dependent on the local provincial government, which made all the appointments. The British medical council proposed the establishment of an all-India medical council, but as this would take time, it also proposed that the government of India should appoint a commissioner of medical qualifications and standards. This proposal was attacked by the nationalists in the Indian legislative assembly on various captious grounds, such as disrespect for Indian universities, and was "talked out." The council was therefore compelled to withdraw recognition from the Indian colleges "in the absence of authoritative information respecting the medical qualifications and standards." This decision has aroused a storm of protest in India, where in the true demagogue spirit the politicians ignore the facts and attribute the decision to racial animosity. In retaliation the president of the All-India Medical Association has called on the Bengal council of medical registration to require British physicians to produce credentials regarding training in midwifery and tropical diseases before allowing them to practice in India and has also advocated a boycott of medical drugs made in England.

Village Settlements for the Tuberculous

The great success of Papworth, the pioneer village settlement for the tuberculous in England, has been described in previous letters. The minister of health has received a deputation from the British legion (ex-soldiers of the Great War) on the subject. The deputation gave an account of the work done in the settlement at Preston Hall, of which the economic results had been highly encouraging. They urged that further government assistance should be given for the extension of existing settlements and also that the government should take steps to extend the movement. The minister said that he had a keen interest in the village settlement movement and recognized that Papworth and Preston Hall had blazed the trail. He hoped that the local authorities with the greater freedom which they would enjoy under the new local government act would devote attention to the subject. On the question of government assistance, he reminded the deputation of the existing housing and other grants now available.

Regulation of Sale of Drugs and Poisons

The report has been issued of the departmental committee appointed in July, 1926, to consider whether any modifications in the poisons and pharmacy acts are desirable. The committee has made a number of important recommendations: 1. That the profession of pharmacy and the control of poisons be kept distinct and dealt with in separate parts of the act. 2. That it shall be unlawful for any person not a registered pharmacist to use any title or description calculated to suggest that he possesses any qualification with respect to the selling, dispensing or compounding of drugs. 3. That the central authority for poisons be the home secretary, assisted by an advisory committee to be called the "Poisons Board," whose functions shall be to prepare a "poisons list" and to assist in making rules with respect to the sale of poisons. 4. That power be given to prohibit the sale of certain poisons except on the prescription of a physician, dentist or veterinary surgeon.

PARIS

(From Our Regular Correspondent)

March 5, 1930.

New Treatment for Diabetes Insipidus

Prof. Marcel Labbé, together with his co-workers Boulin and Justin Bezançon, has published a communication on a new form of treatment in diabetes insipidus by use of extract of the posterior lobe of the pituitary body. They presented a typical observation. A young woman experienced an intense polyuria with an excessive thirst after an infectious sore throat that lasted a month. She did not have glycosuria, signs of cerebral tumor or syphilis. The injection of pituitary extract brought about regularly a decrease in the diuresis. Fourteen months after the beginning of the polyuria the menses were interrupted, the uterus atrophied and became infantile, and a generalized adiposis developed. The basal metabolism was increased. The antidiuretic action of the pituitary extract was marked in this patient and was roughly proportional to the quantity injected. No other glandular extract exerted a similar action on the diuresis. The authors endeavored to dissociate the antidiuretic principle from the pituitary extract. The oxytocic principle

and the pressor principle have already been separated by American physiologists. The pressor principle contains the whole of the antidiuretic principle. By means of fractioned precipitations, the authors succeeded in isolating from the pressor principle the antidiuretic principle; 2 mg. suffices to reduce the diuresis from 15 liters to 450 cc. It is active likewise when administered by the nasal route.

Lecture by Dr. Pauchet on Gastroptosis

Dr. Victor Pauchet, who has had a great deal of experience in the treatment of gastroptosis, gave a lecture before the Société des médecins de Paris. He holds that the condition is not relieved by any single form of treatment but by a number of procedures, the combination of which is indispensable. The physical therapist, the endocrinologist, the gastro-enterologist and the surgeon must cooperate, without any one being able to point to the dominant importance of a particular procedure. One must not confound gastroptosis with dolichogastry, or lengthening of the stomach; in this case, the cardia remains in place. In genuine gastroptosis there is a concomitant drop of the stomach, the diaphragm and the liver. Pauchet for many years has employed a simple method, which is similar to the Lambret procedure but different in that, instead of a strip in the wall, he is content to place a simple catgut suture, thereby attaching the lower margin of the stomach to the triangular ligament of the liver and to the abdominal wall, as far to the left as possible. The greater curvature is raised. The operation is simple if performed under local anesthesia, and benign and facile. It should be followed, of course, by appropriate medical treatment.

Noisy Demonstrations at the Faculty of Medicine in Paris

The students of the Faculté de médecine de Paris staged recently a series of noisy demonstrations, which continued for two weeks and prevented the holding of the courses of Mr. Leveuf, professor of external pathology, and of Mr. Blanchetière, professor of chemistry. These courses had to be suspended by order of the dean. In the courtyard of the Faculté de médecine, many windows were broken. The students' indignation against Mr. Blanchetière was aroused by his alleged excessive and habitual severity in his examinations, and their discontent is of long standing. As for Mr. Leveuf, there seems to have been a misunderstanding from the beginning. Professor Leveuf, during his course, took occasion to explain to his pupils the mode of functioning of the law pertaining to social insurance. This law, which every one (including the deputies who voted for it) recognizes as absurd, provides the retention of a certain percentage of the salaries of all persons holding any position whatever. Many students, while pursuing their studies, perform the duties of aids in the various services of the hospitals (residing sometimes within or sometimes outside the institutions). They receive, from the administration of the Assistance publique à Paris, a slight compensation, which, for the externs, is about 7 francs a day (28 cents), a ridiculous sum, which scarcely represents the cost of a modest meal. According to the law, 5 per cent of this meager compensation must be deducted and withheld. Most of the students are poor; some are compelled to drive taxicabs in the evening and at night to pay their living expenses. Furthermore, the sums thus deducted will bring no future advantage, as they will go into a fund for the care of the aged, from which they will derive no benefit, since, after completion of their studies, they will be scattered to all parts of France for the practice of their profession. Professor Leveuf vainly endeavored to explain to them the mode of functioning of the law but without assuming any responsibility for its existence—solely from the standpoint of making them familiar with the formalities with which they would have to comply. Nevertheless, it was on him that their wrath fell, and they appear to have decided to carry out their demonstrations to attract the attention of the government and force it to pass a ruling that the sums they receive as aids shall be regarded not as a regular salary but as a provisional compensation, of which no amount should be withheld.

Influence of Measles and Whooping Cough on Tuberculosis in Children

The old conception that measles and whooping cough predispose children to tuberculosis is beginning to be vigorously combated in France by Ribadeau-Dumas and by Debré and his pupils. The question appears to have been answered by the research of Dr. Choffé of Salies-de-Béarn. He carefully studied the sequels of whooping cough and measles in a large group in the children's home at Hendaye, where the city of Paris sends children in poor health, some of whom are convalescents from hospitals. It would be difficult to find a better field of observation. Dr. Choffé found among these children 137 who had had measles and ninety-nine who had had whooping cough. About one third of the former had tuberculous ancestors, while six had active lesions. Approximately 40 per cent presented tracheobronchial adenopathy, not a sure sign of tuberculosis but justifying suspicion in a third of the cases. Only two children developed tuberculosis. Five children already had tuberculous lesions, but these showed no advance. Similar results were found with regard to whooping cough. In five of these children there were active lesions. One child developed tuberculosis following an attack of whooping cough. It is not certain that the whooping cough was solely responsible, for this child was in poor health before whooping cough developed. In all the other children there were no untoward sequels. Choffé carried his investigation further and inquired into the effects of scarlet fever on these children. Scarlet fever has, of course, never been charged with having much effect on the progress of tuberculosis. Of 178 children more than 40 per cent of whom had tuberculous ancestors, two showed later tuberculous manifestations of the viscera.

ITALY

(From Our Regular Correspondent)

Rome, Feb. 28, 1930.

Meeting of Physicians of the Premilitary Associations

The first convention of the physicians of the Opera nazionale balilla, an association that provides gymnastic and premilitary training for children, was recently held in Rome. The health activities of this society, which was founded only two years ago, have been intense. There are 2,387 physicians of all specialties who have given voluntary and gratuitous aid. The society has sixty-nine ambulatoriums of its own, while 200 private ambulatoriums are at the disposal of those enrolled. The visits up to January 31 exceeded 300,000. Professor Versari, senator, anatomist of the University of Rome, was chosen president of the congress. Dr. Midulla, the medical head of the society, spoke on the value of insurance against accidents. Among the 200,000 members enrolled, there were 24,654 accidents in one year, of which 3,350 were serious (1,010 with permanent injury) and 20,086 were slight. The speaker said that, by organizing first-aid courses and instructing the young members in a practical manner on the necessity of preserving health, they can be trained to prevent invalidism.

Professor Pende, a clinician of Genoa, presented a paper on "Medical Supervision Through Hygienic Exercises and Sport in Camps and Colonies." The speaker, who believes that physical and mental education should be individualistic, has founded, at the University of Genoa, an "*istituto biotipologico*," which studies personality. For the use of the physicians of the Opera balilla, who are in contact with the youth during the period of growth, Pende devised a record card (biotype), which provides for entering records of all the organs and functions, for anthropometric and radiologic examinations, and for the respec-

tive blood grouping. The last item is valuable in order that transfusion may be carried out with facility. The speaker illustrated with lantern slides his record book and a portable radiographic apparatus.

Professor Pende's communication was discussed by Professors Gallerani, Perna, Valagusa and Viola. *Generale Medico* Tobia emphasized that the health work of the Opera balilla will have a good effect in improving the quality of recruits for the army. Professor Cagetti referred to the crusade that is being waged by the physicians of the Opera balilla against "social" diseases, especially syphilis, trachoma and tuberculosis. Professor Sangiorgi spoke of the campaign against adenoids and of the antivenereal prophylaxis associated with training in sex hygiene. Professor Ceresole, director of the heliotherapeutic center in Venice, discussed the sanitary management to be observed in fresh-air colonies, pointing out the mistakes that are made, in this field, in Italy. The first mistake is the sending of children to the seashore in summer, which causes them to lose weight. The second, which applies to climatology, consists in the lack of method with which heliotherapy is applied; it should be prescribed with exactness, as is any other heroic remedy. The third mistake affects the management, and lies in the fact that the physician has too little authority in the seaside colonies. Professor De Sanctis spoke on the subject of psychology in relation to physical education.

The Academy of Italy

At a meeting of the Classe scienze mediche of the Accademia d'Italia, Professor Bottazzi referred to the special edition of the works of Spallanzani, which is being promoted by the *classe*. In addition, several articles have been accepted for publication, including one by Prof. G. Serra on Egyptian hepatosplenomegalia, and one by Professor Visco on the nutritive value of cereals and leguminous plants in relation to the national problem of alimentation.

Italian Section of the International Society of Microbiology

The Italian section of the International Society of Microbiology will convene soon in Milan. The following topics will be discussed: (1) The jumping movements of micro-organisms and their biologic significance, by Professor Petri of Rome; (2) etiology of the exanthematous diseases of childhood, by Professor Muggia of Turin, and (3) the etiology and epidemiology of undulant fever, with an official paper by Prof. G. Favilli of the University of Florence.

Principal Causes of Death in Italy

The Istituto centrale di statistica in Rome published recently information on the principal causes of death in Italy. With the exception of the war years, the mortality has steadily decreased, reaching its lowest level in 1928. The maximum mortality was recorded in 1918, the year of the influenza pandemic. During the war, about 1,500,000 persons succumbed to wounds and as a result of other conditions leading to an increased mortality. The causes mainly responsible for deaths in Italy are: enteritis (especially in infant mortality), heart disease, cerebral hemorrhage, embolism and thrombosis, and tuberculosis. In the years 1924-1927 there was an increase of deaths due to typhoid and influenza. The mortality due to malaria and pellagra was diminished, while suicide had increased.

Welfare Societies in Sicily

On the occasion of the marriage of the heir apparent, considerable sums were collected by public subscription, to be used for the benefit of three antituberculosis societies working among the children of Palermo; namely, Ospizio marino, the Casa del sole, and the Aiuto materno. The Ospizio marino, founded in 1873 and at present directed by Professor Calandra, houses 300 rachitic and scrofulous children. It consists of five pavilions, to which now a sixth will be added, which will be devoted to radiology and clinical researches. The Casa del sole is directed by Professor Maggio, and, according to Rollier, is one of the best conducted institutions in Europe. Helioclimatic treatments and respiratory gymnastics are carried out.

The Aiuto materno specializes in the prevention of tuberculosis and has a retreat for nursing and weaned infants and four ambulatory dispensaries. It will now obtain a new pavilion, with 100 beds, for tuberculous or defective children under 5 years of age.

Mayors Exceed Their Authority

The mayors of certain communes have assumed on several occasions the right to retire health officials solely because of the fact that they had reached the age of 63, but the Autorità tutoria has notified the mayors that such action exceeds their authority.

Death of Professor Rattone

The death of Prof. Giorgio Rattone, senator and professor of general pathology at the University of Parma, is announced. Born at Moncalieri (Turin) in 1857, he was graduated in medicine and surgery in 1888. A pupil of such great teachers as Angelo Mosso, Foà and Bizzozzero, he took over, at an early age, an instructorship in pathologic anatomy, and in 1885 he was appointed professor at the University of Sassari. In 1886 he was called to a chair in Parma. His principal works are on the etiology of tetanus, on the pneumococcus and on nephritis, and on tumors of the thyroid gland. He published a treatise on micro-organisms, and carried out important researches on the circulation of the liver, on the Pacini corpuscles, and on the nerves of the liver and the spleen. Noteworthy are also his studies on the structure of the spinal ganglions and on the presence of ganglionic cells in the posterior roots of the spinal nerves. He served as rector of the University of Parma and as dean of the Facoltà di medicine e chirurgia.

Instruction in Vocational Guidance

Under the auspices of the government, a course in vocational guidance to meet the needs of 150 inspectors, directors and teachers has been organized in Rome. The opening address was delivered by Professor De Sanctis of the University of Rome, on the subject "Vocational Problems." The principal subjects studied are the following: morphology and the physiology of the period of development (Professor Ilvento); the pathology of the period of development (Professor Banissoni); clinical criteria in vocational guidance and in vocational selection (Professor Diez); psychotechnical methods (Professor Ponzo).

Introductory Lectures of New Professors

Prof. Guido Vernoni, recently called by the faculty of medicine of Rome to occupy the chair of general pathology, become vacant through the death of Professor Bignami, delivered recently the introductory lecture of his course. Professor Vernoni was a pupil in Rome of Marchiafava and of Mingazzini, and studied later in Bologna under Professor Tizzoni and at Florence under Senator Lustig. He has been an instructor in the universities of Sardinia and of Catania. Vernoni took as his subject "the Rôle of Immunity in General Physiology." He advanced the view that immunity, particularly immunity to infection, does not constitute a phenomenon entirely separate from the other factors that assure the defense of the organism but must be studied together with the general physiologic defenses. Duscussing the various modes of reaction of the organism to the different infectious diseases, the speaker remarked that the infectious diseases capable of conferring an enduring immunity are those caused by exogenous microorganisms, which affect largely the so-called barrier systems,

such as the skin, the mucous membranes and the walls of the vascular system. But we ordinarily do not have an enduring immunity against diseases that cause focal inflammation (granulomas, tubercles, abscesses), nor against those diseases that are caused by micro-organisms of an endogenous type, which, after their flourishing period, may continue to exist on the mucosae or in some region of the human organism. In conclusion, Professor Vernoni considered in particular certain diseases, among others, syphilis, drawing certain conclusions in regard to the phenomenon of individual defense, which appears to be less organized and less developed than the phenomenon of the defense of the species.

Prof. Luigi De Gaetano delivered recently the introductory lecture of the official course in clinical orthopedics at the University of Naples. He discussed "Bone Diseases of the Period of Growth; Pseudotuberculosis." After explaining the limitations of orthopedic surgery, the speaker set forth briefly the relations that this specialty bears to accidental injuries and to other branches of social medicine; among others, the provisions for the protection of motherhood and childhood, and the laws pertaining to the subsidiary sanitary arts. Professor Gaetano discussed the clinical and radiologic aspects of the bone diseases of growth, pointing out that, before the advent of radiology, these had been confused with bone and joint diseases of a tuberculous nature. To recognize the genetic causes of these disease forms is, in the present status of our knowledge, difficult and almost impossible unless they are grouped according to their more marked similarities. Professor De Gaetano groups these diseases as follows: Group 1: Coxa plana, Köhler's metatarsal syndrome, osteochondritis of the humeral condyle, dystrophia of the head of the fifth metacarpal. Group 2: Tibial apophysitis, calcaneal apophysitis, humeral epicondylitis, trochanteritis. Group 3: Tarsal scaphoiditis, navicular syndrome of the carpus. Group 4: Diseases of growth of the spinal column. Of each group the speaker explained separately the pathogenic causes.

The League for Combating Cancer

At the instance of the Lega italiana per la lotta contro il cancro (league against cancer), a lecture course on cancer was recently given in Rome, which was attended by the health officials of the provinces, who were already in Rome for a short course on tuberculosis. Professor Alessandri discussed tumors of the esophagus, the stomach and the rectum; Professor Brancati dealt with tumors of the breast, and Professor Bilancioni considered tumors of the tonsil and the larynx. Other lectures were delivered by Professor Dionisi, who illustrated the general morphology of malignant tumors; by Professor Pestalozza on cancer of the uterus, and by Professors Busi and Perez of the University of Rome.

JAPAN

(From Our Regular Correspondent)

Feb. 26, 1930.

Prize Winners

The Japanese Academy awarded the prizes for 1929 to three scientific investigators in the Academy Hall at Uneno, Tokyo, February 12. Dr. B. Adachi, an emeritus professor in the Kyoto Imperial University, was one of the prize winners. His works are chiefly on the anatomic differences between the arteries of Japanese and those of Europeans, and about a hundred particulars have been pointed out by his researches. The Osaka *Mainichi* (a newspaper) memorial prize of the present emperor's wedding ceremony was also awarded.

In order to commemorate Dr. Miyairi, emeritus professor in the Kyushu Imperial University, the Miyairi fund is entrusted to the university. The prize this year has been given to Dr. S. Yokokawa, professor in the Taiwan Imperial Medical College; it is reported that he will employ part of the prize money for investigation and will contribute the rest to the library of the college.

The Japan Red Cross Society awards medals called Nightingale-Ishigure medals to some of the most industrious and dutiful nurses of the society in this country every year. The candidates have already been named from the branch hospitals and the prize winners will presently be selected.

Medical Textbooks in Chinese

For the benefit of Chinese medical students, the Dojin Association planned to publish a series of medical textbooks in Chinese, and the first book was put on the market last year, the textbook on anatomy compiled by Dr. Nishi, professor of anatomy in the Tokyo Imperial University, and translated by Dr. Chang. The second, the textbook on pharmacodynamics by Dr. Hayashi, dean of the Medical Department of the Tokyo Imperial University, has just been published; the translation was by Dr. Liu. There are now eighty-seven Chinese medical students studying in the colleges of this country.

International Leprosy Conference

The International Leprosy Conference will be held in Tokyo for three days beginning April 8, when the general meeting of the Japan Medical Association is to be in session. The subjects to be taken up are "studies on the Early Diagnosis of Leprosy," "The Treatment of Leprosy" and "Segregation of Lepers." The delegates are Dr. Cumming from the United States, Dr. Chagas from Brazil, Dr. Dadsen from Denmark, Dr. Burnet from the League of Nations, and Dr. Nagayo from Japan.

Intestinal Parasites Among Students in Tokyo

The sanitary section of the Tokyo prefectural office has planned to exterminate intestinal parasites harbored by students in higher schools and children in the primary schools in Tokyo. In order to enforce the plan, the microscopic examination of feces was carried out among the students in the Prefectural Horticultural School under the direction of Dr. Karube, chief of the bureau, and the results will be published shortly.

Memorial in Honor of Noguchi

Some of the physicians at Fukushima, the native place of the late Dr. Hideyo Noguchi, have planned several things to commemorate the great medical investigator. A stone monument has been erected inscribing his life works in the front garden of his old house on Lake Inawashiro, and the house has been bought to be kept forever in his memory. A library will be established near the house and the Rockefeller Foundation, it is reported, will send a yearly donation for its upkeep.

New Members of the Diet from the Medical Profession

At the general election, February 20, fourteen physicians out of twenty candidates were elected to the diet, an increase of four members from the medical profession.

Bacillus-Carrying Rats in Osaka

The sanitary bureau of Osaka is reported to have found two rats carrying plague bacilli, January 31, when examining 698 rats caught in the dangerous quarter of the city. Five more were found for five days successively. Two of them were ditch rats and the others were house rats. The authorities concerned are still paying for rats caught in the city to take precaution against the epidemic.

Personal

Dr. Yasumi, surgeon major-general, died at the age of 70, Dec. 7, 1929. After his retirement from the military service, he practiced optical medicine at Akasaka, Tokyo, and was one of the authorities in ophthalmology in this country.

Dr. S. Sakai, professor in the Aichi Medical College, died of cerebral apoplexy in Nagoya, Dec. 16, 1929, aged 52. He

was a graduate of the Tokyo Imperial University and was appointed professor in the college in 1923 after his return from European study.

Dr. Nagayo, chief of the Government Institute for Infectious Diseases, and Dr. Miyajima, chief of the Kitasato Institute, left Tokyo for Shanghai, Dec. 24, 1929. They met Dr. Rejchman, director of the Health Bureau in the League of Nations, who was investigating sanitary conditions there, and talked over matters concerning the leprosy conference which is to be held in this country in April.

BERLIN

(From Our Regular Correspondent)

Research on Heredity

Before the Berliner Medizinische Gesellschaft, Prof. Erwin Baur, director of the Kaiser-Wilhelm-Institut für Züchtungsforschung in Müncheberg, near Berlin, spoke recently on the production of new hereditary characters through strong chemical and physical stimulation. Baur took as his point of departure the fact that nothing essentially new arises from sexual propagation, since every individual represents only a combination of the qualities of the parents. Only occasionally, as the result of mutation, a new character develops in single individuals who differ in their inheritance from the original race. In recent years, research, particularly on certain flies (*taufliege*) and on the snapdragon plant, has shown that this mutation arises through changes in the nuclear substance of the cells and especially through modifications in a definite part of a chromosome. The origin of new hereditary qualities may be based also on the fact that all or certain chromosomes are doubled or are lost. Many endeavors have been made to solve the problem experimentally by producing arbitrarily, through definite external influences, such profound changes in the cell nucleus and thus bring about the mutation.

In the experiments of American scientists with the *taufliege*, changes were brought about in the nuclear substance through the action of radium rays, whereby such mutations were effected. Baur, however, succeeded in producing mutations in plants through changes in the structure of the protoplasm of the cells. In numerous photographs he showed in his experiments on 400,000 individual specimens the malformations and changes that occur in the snapdragon. These experiments have not merely theoretical scientific interest but are also of practical importance because a new method is opened up by which the variations in cultivated plants and domestic animals can be increased and new selective material secured for breeding purposes. They are of importance also to medicine. If relatively weak stimulations by chemicals, roentgen rays and higher temperatures bring about changes that frequently are not observed until the third generation, the circumstance deserves the attention of therapeutists.

The plants recovered from disturbing stimulations, such as immersion in hot or cold solutions, and centrifugation in chloral hydrate, ether and alcohol, continued to grow normally and propagate, producing in the next generation no visible changes. Not until the third generation did there appear, in comparatively large numbers, striking malformations, of which the speaker displayed numerous photographs: dwarfism, degenerations, and strangely bent leaves and blossoms. Further experiments showed that, with stronger stimulation, as with radium or with sharp poisons, the malformations were found even in the first generation.

In a few closing remarks, Geheimrat Kraus stated that what had become a reality for the botanists, namely, the production of species of greater value, was still for the medical men only a beautiful dream.

Research on Family Trees

Before the Kaiser-Wilhelm-Gesellschaft zur Förderung der Wissenschaften, Prof. Ernst Rüdin, director of the genealogic-demographic department of the German research institute for psychiatry in Munich, discussed the results of psychiatric research on hereditary transmission. His address may be thus summarized: Positive eugenics sets for itself the task of promoting in all strata of the population the greatest possible propagation of gifted and healthy offspring. Negative eugenics assumes the task of preventing, as far as possible, the propagation of persons with hereditary diseases, and of mental and physical inferiors. The latter presupposes the possibility of distinguishing between hereditary and nonhereditary aptitudes and good and bad qualities of character. By research on family trees, one must determine by observation the mental status of the children and other relatives of the various categories of mentally ill persons and compare it with the status of children of average persons. For example, it is known that half of the children of persons with hereditary chorea develop choreic symptoms at an early age; in the offspring of manic-depressive patients one finds 33 per cent who are affected, and among the children of schizophrenic and epileptic parents about 10 per cent; among hysteria patients with seizures, about 13 per cent. In addition to these hereditary diseases, mental defects appear in at least as many more of the other children. Thus was shown the great dependence of the mental health of children on the mental health of both parents. With further development of this research it will become possible to inform any person whether mental disturbance, nervous weakness or mental inferiority will develop among his children. These figures should govern the conduct of those who are fit to propagate and those who are not fit. Of the measures by which persons with hereditary defects can prevent the propagation of their unfortunate inheritance, Rüdin recommended sterilization because it is sure and associated with no danger, and because the physical and mental personality, and the usual habits and enjoyments, are preserved. This research will be found in detail in Rüdin's book, "Psychiatrische Indikation zur Sterilisierung," Berlin, F. Dümmler.

Effect of Influenza on Population

From statistics published by the federal bureau of health on the effects of the recent influenza epidemics in Germany, it appears that influenza in recent years has nullified the slight excess of births over deaths. In the epidemics of 1926-1927 and 1928-1929, the deaths did not actually exceed the births, but the excess of births over deaths was reduced in cities with 100,000 or more inhabitants, in the first quarter of 1927, to 1.1, and, in the first quarter of 1929, changed to an excess of deaths over births of 2.3. The statistical reports of the *reichsgesundheitsamt* consider conditions in some other European countries. France appears to have been hit the hardest. There, the excess of deaths over births for the first quarters of 1927 and 1929, respectively, was 3.2 and 7.0, which reveals the effects of the two last influenza epidemics.

Marriages

LEE EDWARDS SUTTON, JR., Richmond, Va., to Miss Ruth Rogan McClellan of New York, February 8.

DE WITT KLUTTZ, Washington, N. C., to Miss Annie Stevens of York, S. C., February 15.

MEYER B. FRACTMAN, San Francisco, to Miss Helen Dean of Los Angeles, March 1.

CHARLES V. TAYLOR to Miss Katherine L. Roeth, both of Baltimore, March 22.

Deaths

Henry Albert ✠ Des Moines, since 1926 commissioner of health of the Iowa State Department of Health, died, April 6, of peritonitis, following an operation for appendicitis. Dr. Albert was born in Iowa, Oct. 11, 1878. After receiving his M.D. degree from the State University of Iowa College of Medicine, at Iowa City, in 1902, Dr. Albert studied at the University of Austria. He was then appointed instructor in pathology and bacteriology and in 1903-1922 was professor and head of the department at his alma mater. He served during that same period as director of the laboratories of the Iowa State Department of Health. In 1922 he was director of the hygienic laboratory of the University of Nevada. He was a member of the American Public Health Association, the American Association of Pathologists and Bacteriologists and the Society of American Bacteriologists.

William House ✠ Portland, Ore; University of Buffalo (N. Y.) School of Medicine, 1895; member of the American Neurological Association and the American Psychiatric Association; past president of the Portland City and County Medical Society and the Portland Academy of Medicine; formerly lecturer on medical jurisprudence, assistant and associate professor of nervous and mental diseases, University of Oregon Medical School; associate editor of *Northwest Medicine;* aged 56; died, March 6.

Edwin Samuel Popham, Winnipeg, Man., Canada; University of Manitoba Faculty of Medicine, Winnipeg, 1891; professor emeritus of medicine and formerly registrar, secretary and member of the council at his alma mater; for many years on the staff of the Winnipeg General Hospital; medical director and referee of the Monarch Life Assurance Company; aged 73; died, February 11.

Thomas Harkins Ingram, Memphis, Tenn.; Vanderbilt University School of Medicine, Nashville, 1910; formerly clinical assistant in medicine, surgery and orthopedic surgery, University of Tennessee College of Medicine; served during the World War; aged 47; died, March 9, at the U. S. Veterans' Hospital, Legion, Texas.

James Peter Hunt, New York; University and Bellevue Hospital Medical College, New York, 1905; served during the World War; formerly honorary police surgeon and consulting physician to the police department and examining physician for the board of education; aged 47; died, March 9, in Miami, Fla.

Gustav Adolph Fried ✠ New York; Columbia University College of Physicians and Surgeons, New York, 1903; formerly assistant professor of pathology and associate professor of bacteriology, Fordham University School of Medicine; on the staff of the Mount Sinai Hospital; aged 52; died, March 20.

Anny Marea Caroline Ernestine Petersen Saunders ✠ Elgin, Ill.; State University of Iowa College of Medicine, Iowa City, 1912; member of the American Society of Clinical Pathologists; clinical pathologist to the State Psychopathic Institute; aged 41; died, January 1, at Davenport, Iowa, of pneumonia.

George E. Crawford ✠ Cedar Rapids, Iowa; Bellevue Hospital Medical College, New York, 1877; past president of the Iowa State Medical Society and the Linn County Medical Society; on the staff of St. Luke's Methodist Hospital; aged 81; died, March 27, of adenocarcinoma of the sigmoid.

Berthold Charles G. Tiesing ✠ Columbia, Neb.; University of Jena, Germany, 1895; past president of the Platte County Medical Society; member of the county sanity commission and city physician; for many years on the staff of the Columbus Hospital; aged 57; died, March 17, of carcinoma.

John Ferguson Cooke Forster ✠ Holyoke, Mass.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1902; member of the American College of Surgeons; served during the World War; on the staff of the Holyoke Hospital; aged 50; died, February 13, of hypostatic pneumonia.

Ervin Wilbur Hodsdon ✠ Center Ossipee, N. H.; Missouri Medical College, St. Louis, 1884; president of the Carroll County Medical Society; formerly postmaster, member of the school board and of the board of health; also a druggist; aged 66; died, March 15, of coronary thrombosis.

Harry Bliss Hayward, Valparaiso, Ind.; American College of Medicine and Surgery, Chicago, 1903; member of the Indiana State Medical Association; aged 50; died, March 20, of heart disease, while performing an operation at the Christian Hospital.

James I. Northrup, Belleville, Mich.; University of Buffalo School of Medicine, 1880; formerly postmaster of River Rouge and member of the school board; aged 79; died, March 15, at the Highland Park (Mich.) General Hospital, of cerebral hemorrhage.

Walter Scott Macdonald, Winnipeg, Man., Canada; Western University Faculty of Medicine, London, Ont., 1893; formerly demonstrator of practical anatomy and lecturer in surgical anatomy at his alma mater; aged 60; died, February 12.

O. Wadsworth Budlong, Belford, N. J.; Georgetown University School of Medicine, Washington, D. C., 1880; on the staff of the E. C. Hazard Hospital; aged 75; died, March 18, at St. Vincents' Hospital, Norfolk, Va., of arteriosclerosis.

Rufus E. Lefevre ✠ Reading, Pa.; Jefferson Medical College of Philadelphia, 1900; for many years on the staff of the Reading Hospital; aged 54; died, March 2, at the Frankford Hospital, Philadelphia, of carcinoma of the rectum.

Andrew J. Stephenson, Okemah, Okla.; University of Arkansas School of Medicine, Little Rock, 1898; member of the Oklahoma State Medical Association; aged 61; died in March, of myocarditis and dilatation of the heart.

Joseph Gideon Stromberg ✠ Chicago; Dearborn Medical College, Chicago, 1907; aged 47; on the staff of the Swedish Covenant Hospital, where he died, March 31, of septicemia, as the result of an injury to his finger.

William Lionel McClure ✠ Boston; Harvard University Medical School, Boston, 1923; on the staff of the Massachusetts General Hospital, where he died, March 10, of injuries received in an automobile accident, aged 36.

Elijah L. Connally, Atlanta, Ga.; Atlanta Medical College, 1859; Confederate veteran; chairman of the first board of health and formerly member of the board of education; aged 92; died, March 16, of heart disease.

Edgar Irving Leavitt ✠ San Francisco; Cooper Medical College, San Francisco, 1910; member of the Associated Anesthetists of the United States and Canada; aged 48; died, March 7, at St. Luke's Hospital.

Harry Bulkely Clough, Vancouver, Wash.; Louisville (Ky.) Medical College, 1897; aged 65; died, January 14, at the U. S. Veterans' Hospital, Portland, Ore., of cerebral arteriosclerosis and hypertension.

David George Lemkowitz, Cut Off, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1907; member of the Louisiana State Medical Society; aged 46; died, February 22, in New Orleans.

Clark Spencer Knox, Superior, Wis.; Rush Medical College, Chicago, 1883; member of the State Medical Society of Wisconsin; on the staff of St. Mary's Hospital; aged 72; died, February 27, of heart disease.

James Thornton Neel ✠ Gratton, Va.; Medical College of Virginia, Richmond, 1916; served during the World War; aged 41; died, January 28, at St. Luke's Hospital, Bluefield, W. Va., of tuberculous meningitis.

Henry Earle Webster ✠ Duluth, Minn.; Victoria University School of Medicine, Coburg, Ont., 1884; formerly city health officer; aged 67; died, March 7, of coronary embolism and chronic myocarditis.

William Strother Gaines, Spokane, Wash.; Bellevue Hospital Medical College, 1887; member of the Washington State Medical Association; aged 75; died, February 24, at St. Luke's Hospital, of pneumonia.

Roger William Gay, Ironton, Mo.; Beaumont Hospital Medical College, St. Louis, 1892; member of the Missouri State Medical Association; aged 58; died in March, of malignancy of the prostate.

Maurice A. Walker ✠ Dillon, Mont.; Denver College of Medicine, 1889; Harvard University Medical School, Boston, 1891; on the staff of the Barrett Hospital; aged 63; died suddenly, February 21.

Randall Howard Blanchard ✠ Pittsfield, Mass.; Bellevue Hospital Medical College, New York, 1896; on the staff of the House of Mercy Hospital, where he died, March 14, of pneumonia, aged 57.

John A. Hutchinson, Westmount, Que., Canada; McGill University Faculty of Medicine, Montreal, 1878; for thirty-nine years medical health officer of Westmount; aged 77; died, January 24.

Nathan William Soble ✠ Rochester, N. Y.; Medical Department of Columbia College, New York, 1887; on the staff of the Highland Hospital, where he died, March 9, of pneumonia, aged 67.

Wilmer Devilla Pinsoneault ✠ Watertown, N. Y.; University and Bellevue Hospital Medical College, New York, 1899; on the staff of the Mercy Hospital; aged 55; died, March 2, of angina pectoris.

Sara Tew Mayo ✠ New Orleans; Woman's Medical College of Pennsylvania, Philadelphia, 1898; on the staffs of the Touro Infirmary and the Baptist Hospital; aged 60; died, March 7, of angina pectoris.

Robert H. Ross, Kokomo, Ind.; Medical College of Indiana, Indianapolis, 1879; member of the Indiana State Medical Association; aged 71; died, March 20, of chronic myocarditis and nephritis.

William D. W. Hall ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; aged 64; died, February 2, of atelectasis of the right lung and lymphatic leukemia.

Malcolm S. Councill ✠ Bryn Mawr, Pa., University of Maryland School of Medicine, Baltimore, 1896; on the staff of the Bryn Mawr Hospital; aged 62; died, March 23, of heart disease.

Jesse James Hoover ✠ Oklahoma City, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1925; aged 31; died, January 22, at Boulder, Colo., of tuberculosis.

John E. Hoover, Indianapolis; Medical College of Indiana, Indianapolis, 1881; aged 71; died, March 16, at the Methodist Episcopal Hospital, of uremia and carcinoma of the prostate.

Harry F. McDowell ✠ Franklin, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1895; on the staff of the Franklin Hospital; aged 62; died, March 10, of heart disease.

James Burns Magee, Cleveland, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1892; aged 66; died suddenly, in February, of heart disease.

Benjamin Franklin Darnell, Fitzpatrick, Ala. (licensed, Alabama, 1883); member of the Medical Association of the State of Alabama; aged 96; died, March 2, of pneumonia.

Jacob Henry Haldeman, Paola, Kan.; Jefferson Medical College of Philadelphia, 1883; aged 68; died, February 18, at the Research Hospital, Kansas City, Mo.; of pneumonia.

Eugene W. Young, Minneapolis; Medical Department of Hamline University, Minneapolis, 1896; aged 77; died, February 19, of cerebral hemorrhage and arteriosclerosis.

Bernard Joseph Tynan, Chicago; Creighton University School of Medicine, Chicago, 1927; aged 29; died, March 9, of injuries received in an automobile accident.

Solon Scott Peterson, Gastonia, N. C.; University of Maryland School of Medicine, Baltimore, 1883; aged 72; was found dead in bed, February 19, of heart disease.

Charles Byron Griffith ✠ Chicago; Illinois Medical College, Chicago, 1910; aged 49; died, March 26, of chronic myocarditis and acute dilatation of the heart.

John L. Rains, Ennis, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1891; aged 68; died, February 16, of arteriosclerosis and cerebral thrombosis.

Nellie B. Hascall, Fallon, Nev.; California Eclectic Medical College, Los Angeles, 1905; aged 60; died, March 5, of chronic myocarditis and lobar pneumonia.

James G. Thomison, Dayton, Tenn.; Vanderbilt University School of Medicine, Nashville, 1876; aged 77; died, March 4, probably of cerebral hemorrhage.

William A. J. Pollock, Pensacola, Fla.; Atlanta Medical College, 1894; member of the Florida Medical Association; aged 59; died, March 5, of heart disease.

Daniel Buckley, Seattle; St. Louis University School of Medicine, 1929; aged 24; intern, Seattle City Hospital, where he died in February of pneumonia.

Alice B. Williams, Columbia City, Ind.; Fort Wayne College of Medicine, 1894; for four years county coroner; aged 63; died, March 23, of heart disease.

Frank Standfield Dunham ✠ Kansas City, Mo.; Eclectic Medical Institute, Cincinnati, 1893; aged 61; died, January 27, of myocarditis and diabetes mellitus.

Alfred P. Scully ✠ Cleveland; Trinity Medical College, Toronto, Ont., Canada, 1899; aged 57; was shot and killed, March 3, by an unknown assailant.

William D. Roper, Atlanta, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1904; aged 62; died, March 16, in a local sanatorium, of pneumonia.

John Samuel Owen, Lansing, Mich.; Michigan College of Medicine, Detroit, 1884; aged 70; died, March 16, at East Lansing, of cerebral hemorrhage.

David Pellman Boyer ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 55; died, March 23, of heart disease.

Columbus L. Myers, Covington, Ind.; Rush Medical College, Chicago, 1873; aged 80; died, March 18, of concussion of the brain and lobar pneumonia.

Bernard Jules Rosen ✠ New York; Yale University School of Medicine, New Haven, 1906; aged 46; died, February 1, of diabetes mellitus.

David Cunningham Scott, Kingstree, S. C.; Medical College of the State of South Carolina, Charleston, 1876; aged 80; died in March of pneumonia.

Michael Langford, Blythewood, S. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1893; aged 63; died, March 3, of heart disease.

J. Edward Wallis ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1884; aged 71; died, March 27, of heart disease.

Lewis C. Smith, Bonanzo, Ark.; University of Arkansas School of Medicine, Little Rock, 1884; aged 71; died, February 28, of heart disease.

Frank P. Garrard, Boyd, Ky.; University of Louisville (Ky.) School of Medicine, 1887; aged 70; died in February of cerebral hemorrhage.

William Mastin Green, Valley Head, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1877; aged 75; died in February.

Linzie Tilden Morrill ✠ Peabody, Kan.; Albany (N. Y.) Medical College, 1873; aged 77; died, February 13, of tabes dorsalis and nephritis.

Francis A. McGrath, Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 57; died, March 21, of cerebral hemorrhage.

Francis M. Prettyman, Northfield, Minn. (licensed, Minnesota, under the Act of 1887); aged 80; died, February 13, of cerebral hemorrhage.

James Rogers, Forest, Ont., Canada; Western University Faculty of Medicine, London, 1901; aged 57; died, January 20, of heart disease.

John D. Young, Brookport, Ill.; Louisville (Ky.) Medical College, 1874; Civil War veteran; aged 85; died, March 8, of diabetes mellitus.

John Nathaniel Koffman, Humboldt, Tenn.; University of Nashville Medical Department, 1881; aged 78; died, February 26, of pneumonia.

Alva Alonzo Conley ✠ Cannon Falls, Minn.; University of Minnesota Medical School, Minneapolis, 1914; aged 30; died, March 11.

Henry H. Compton, Allen, Texas; Kentucky School of Medicine, Louisville, 1870; aged 81; died, March 23, of pulmonary edema.

Charles A. Gallagher ✠ Marietta, Ohio; Rush Medical College, Chicago, 1882; aged 69; died suddenly, March 5, of heart disease.

Christian Hoeg, Decorah, Iowa; University of Christiana, Norway, 1892; aged 64; died, February 14, of cerebral hemorrhage.

Julius J. Boeheim ✠ Duquoin, Ill.; Marion-Sims College of Medicine, St. Louis, 1895; aged 64; died, March 18, of heart disease.

Alexander H. Moore, Greencastle, Ind.; Medical College of Indiana, Indianapolis, 1881; aged 78; died, March 17, of myocarditis.

James Theodore Livengood, Hubbard, Iowa (licensed, Iowa, 1886); aged 75; died, March 2, of heart disease and nephritis.

Harvey M. Samson, Lancaster, Ohio; Baltimore Medical College, 1893; aged 60; died, March 14, of cardiovascular renal disease.

Edgar L. Larkins ✠ Terre Haute, Ind.; Indiana Medical College, Indianapolis, 1878; aged 74; died, March 20, of heart disease.

Robert T. Laseter, Gibson, Ga.; University of Georgia Medical Department, Augusta, 1890; aged 71; died, January 25.

F. M. Gordy, Cusseta, Ga.; College of Physicians and Surgeons, Baltimore, 1881; aged 72; died, January 19, of pneumonia.

Luman B. Rulison, Watervliet, N. Y.; Albany Medical College, 1884; aged 69; died, February 7, of myocarditis.

Harold Haydon Walker, New Paltz, N. Y.; Baltimore Medical College, 1905; aged 47; died, March 11.

Bureau of Investigation

SYRUP OF ALFEMINE, ET AL.

The Sherman L. Davis Preparations and Propaganda

For more than two years past THE JOURNAL has been receiving inquiries regarding Dr. Sherman L. Davis of Indianapolis and certain preparations of Dr. Davis' devising. Here are some typical letters. This from a Louisville, Ky., physician:

"Will you kindly give me all the information you have, if any, concerning one Dr. Sherman L. Davis of Indianapolis, Ind.? This man made an address this week before the local dental society on diet. He made the statement that he knew of a case where the patient was cured of a sty by eating one-half head of lettuce. That another patient was cured of boils by eating cabbage. That these cures occurred overnight."

This from a physician in Allentown, Pa.:

"During the past week, under the auspices of the dental society, a Dr. Sherman Davis has been giving a course of lectures on food. He has been active in introducing a calcium tablet, a cod liver oil called 'Vicodol,' and a syrup of alfalfa. The calcium idea is, of course, evident, but it seems his preparations are the only ones that can bring about the desired results. . . . Can you give me any information as to the standing of Dr. Davis and his work?"

A St. Paul, Minn., physician writes:

"Kindly inform me as to the merits of the preparations described in the accompanying pamphlet. Dr. Sherman L. Davis has been boosting the subject of dietetic and medical treatment of dental caries to the dentists, but the claims made and the indefinite list of the description of the drugs smack of quackery to me."

From St. Louis, Mo., comes this note:

"Will you please give me any information you may have regarding 'Syrup of Alfemine,' put out by the Ucoline Products Company, Chicago? This was recommended to one of my patients by a dentist for so-called softening of the teeth."

A registered nurse connected with a large Pennsylvania public service company writes:

"Will you please inform me as to the reliability and the virtues of the Sherman L. Davis treatment to build up good sound teeth?"

Sherman L. Davis, Ph.D., is Professor of Chemistry and Director of Nutritional Research in the Indiana University School of Dentistry. In the June, 1929, catalogue of the Indiana University School of Dentistry, his name appears as "Louis Sherman Davis, Ph.D." Dr. Davis is neither a physician nor a dentist. He obtained his A.B. and A.M. degrees from the Indiana University in 1891 and 1892, respectively. He obtained his Ph.D. from the University of Marburg, Germany, in 1896. For some years he was Professor of Chemistry in the School of Liberal Arts at Indiana University; for some years, too, he is said to have been lecturer on materia medica and toxicology at the Indiana University School of Medicine. In 1926 he was transferred from the School of Liberal Arts to the dental school of the same university.

The Dean of the Indiana University School of Dentistry informs us that Professor Davis has done research work in the field of physiologic chemistry and nutrition; that since his transfer to the dental school, his principal problems have been the study of dental caries, pyorrhea and Vincent's stomatitis; that he has had a special grant from Daniel Guggenheim for this work; and that he has collaborated with Drain of the University of Iowa, Howe of Harvard, Forsythe of Michigan, and others.

A survey of the *Decennial Indexes of Chemical Abstracts* from 1906 to 1926 shows no reference to Sherman L. Davis or Louis Sherman Davis. Neither name seems to be on the membership roll of the American Chemical Society nor of the American Federation of Societies for Experimental Biology and Medicine. There was published in the *Journal of Dental Research* for February, 1929, an article by Sherman L. Davis on "The Relation of Nutrition to General Immunology." This article was entirely devoid of experimental work.

During the past few years Professor Davis has been doing a good deal of lecturing before dental societies. Letters to THE JOURNAL from physicians who have heard the lectures intimate that the professor's enthusiasm sometimes seems to exceed his judgment and his knowledge.

In his talks Professor Davis recommends certain proprietary medicinal products, four in number: "Syrup of Alfemine," "Vicodol," "Caperoid Tablets" and "Vicaperol Capsules." All of these products used to be manufactured by the Ucoline Products Company of Indianapolis, Ind. In November, 1929, we were informed that the manufacture and distribution of these products has been taken over by the Rochester Laboratories, Inc., of Rochester, Minn., said to be owned and operated by Dr. C. C. Robinson of Indiana Harbor, Ind.

According to the Dean of the Indiana University School of Dentistry, an agreement has been entered into whereby the Rochester Laboratories prepare and distribute these preparations (the formulas of Professor Davis) on a royalty basis. All royalties are turned over to the trustees of Indiana University and are used to support the Foundation for Nutritional Research of that school. Professor Davis does not receive any part of the royalties.

According to an eight-page leaflet dealing with Professor Davis' work, the following not very informative details are given regarding the four proprietary medicinal products that Professor Davis has devised:

Syrup of Alfemine.—This is said to present "a ferric salt in combination with the pyrrol nucleus of the hemoglobin molecule."

Caperoid Tablets.—This is described as a "5-grain calcium-phosphorus-parathyroid compound," which is said to contain "calcium and phosphorus in the definite proportions in which they are found present in bone and dentine."

Vicodol.—This is described as "a specially blended cod liver oil, rich in the vitamins A, D and E."

Vicaperol Capsules.—These are said to be soft gelatin capsules containing a combination of Caperoid Tablets and Vicodol, with the calcium and phosphorus of the Caperoid Tablets suspended in Vicodol.

Elsewhere in this same leaflet, it is stated that these proprietary preparations should be "properly classified as foods rather than as drugs."

Undoubtedly, the newly formed Council on Dental Therapeutics created by the American Dental Association will, in due time, investigate and report on the formulas of Professor Davis that are sold under proprietary names. Meanwhile, the entire arrangement constitutes certainly an unusual scheme in its relationship to the practice of either scientific medicine or dentistry.

Correspondence

PRIORITY AS TO THE ACTIVATION OF FOODS BY ULTRAVIOLET RAYS

To the Editor:—For some years, in referring to the discovery of the activation of foods by means of ultraviolet rays, I have stated that Hess and Steenbock made this observation "almost simultaneously." It seemed to me, in view of the fact that the discovery was made independently and so nearly at the same time, that this was a liberal way of stating the matter. However, in a recent paper published in THE JOURNAL, Steenbock has placed the matter in a different light by the statement: "The experiments of Hess and his co-workers followed ours closely." It therefore appears necessary for me to be more definite in regard to chronological sequence. Such action is all the more advisable as this phrase has been quoted by other writers.

My experiments with the use of ultraviolet rays in connection with the prevention and cure of rickets began in the spring of 1918 and were suggested by the marked seasonal incidence of this disorder. A few years later, in my laboratory, food was subjected to the rays but their effect was not appreciated. In 1923 I found that oils, flour, etc., could be rendered antirachitic by exposure to ultraviolet rays. This fact was reported before and discussed at the American Pediatric Society, June 7, 1924; the title and abstract of this paper were sent to the

secretary of the society on April 10 of that year. Both the abstract and the discussion will be found in the *Transactions* of the society (volume 36, June 5-7, 1924). The abstract was published in the *American Journal of Diseases of Children* in the October issue. The first announcement by Steenbock of the possibility of ultraviolet activation was made in *Science*, Sept. 5, 1924.

My claim to priority is based on the presentation of the paper before the American Pediatric Society, June 7. If a communication of this kind does not constitute an announcement and is to be waived aside as of no consequence, then the procedure of scientific meetings will have to be revised. Under such conditions, before communicating original work one will have to arrange for early publication. However, as far as I am aware, in the academic circles of every country the presentation of a paper before a scientific society constitutes a public announcement.

I shall not enter into the question of patent rights, as I have not applied for a patent and am opposed to this procedure. The question of patent rights has never been made the deciding factor in regard to scientific priority.

ALFRED F. HESS, New York.

THYMOPHYSIN

To the Editor:—I have received from the American Bio-Chemical Laboratories a circular letter urging me to use thymophysin, with the statement that it is far superior to pituitary extract and as an "AID FOR QUICK DELIVERY." The circular is accompanied by the reprint of an article published by Dr. Jarcho in the *American Journal of Obstetrics and Gynecology*. In reply, I have written the following letter, which you are authorized to publish in THE JOURNAL:

"I received your letter of March 20th in which you recommend the use of Thymophysin as an 'AID FOR QUICK DELIVERY.'

"I am astonished that your company would propagate such dangerous practice. No doctor is justified, in my opinion, in giving remedies to aid and hasten normal delivery and your advertisements which say that such interference with the natural course of labor is safe and recommended by high authorities will lead the doctors into temptation and will contribute directly to the continuation of the present deplorably high maternal and fetal mortality in childbirth.

"Thymophysin has the same effect as pituitary extracts and reputable pharmaceutical firms are still having difficulty in atoning for the evils they created when these extracts first came out.

"We have exhibited thymophysin often enough to convince us that it is a dangerous remedy when given indiscriminately during labor, and your advertisement invites such indiscriminate use."

J. B. DE LEE, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

PLACENTA IN UTERUS LONG AFTER DELIVERY

To the Editor:—A case in this vicinity, which has been some cause for discussion, has been brought to my attention. The patient was delivered in December, 1928. The physician in charge reports a normal delivery and is sure that the placenta was delivered intact. Six months later it seems that the patient was curetted and it is reported that some pound or more of placental tissue was removed at this time. I have been doing surgery for a number of years and have never found this condition. I wish you would please give me what you have on retained placentas and conditions resulting therefrom.

R. M. EUBANKS, M.D., Little Rock, Ark.

ANSWER.—Pieces of placental tissue may remain in the uterus for a long time. De Lee reports finding a piece of placenta nine months after delivery, Playfair removed a piece eleven months afterward, and Ries found chorionic villi sixteen years after an abortion. In the case cited there are a number of possibilities. The physician may have been mistaken about the intactness of the placenta at the time of delivery and a piece may have been left. However, it is almost incredible that as much as a pound of placenta should be left in the uterus, because the average placenta weighs about 500 Gm. (1 pound, 2 ounces). Of course, if twins were delivered and they were dichorionic, one placenta might have been overlooked. A second possibility is that a relatively small piece of placenta was left in the uterus and that this grew to the size found at the time of curettement. After the death of an embryo or fetus the placenta may continue to grow for a time, because it is nourished by the maternal blood in the intervillous space. A third possibility is that another pregnancy occurred subsequently and the placenta obtained at operation was from the second ovum. Here, however, it is hardly likely that the placenta would weigh a pound or more unless it was abnormal. A fourth possibility is that a chorio-epithelioma developed; but, before this tumor mass became large enough to weigh a pound, the patient would have shown signs and symptoms of cancer. A fifth possibility is that a necrotic submucous fibroid was removed at the time of the curettement and was mistaken for placental tissue.

Of course, the fourth and fifth possibilities can be eliminated by a careful microscopic examination of the tissue that was removed. The inquiry does not mention why the curettement was performed. It is assumed that the operation was necessitated by the presence of abnormal bleeding. The latter can occur with any of the five possible diagnoses.

COMPOSITION OF TEAR GUN GAS—TOXICITY OF CHLORO-ACETOPHENONE

To the Editor:—The Federal Laboratories of Pittsburgh are putting out a tear gas gun. Will you give me information as to the ingredients in this tear gas and as to whether or not it is really harmless on human beings? I will appreciate any information or any reference to literature you may give me on this subject.

H. L. LEVIN, M.D., Buffalo.

ANSWER.—Inquiry was made of the Federal Laboratories of Pittsburgh concerning the composition of the gas used in the tear gun. In reply the Federal Laboratories stated that the product contains chloro-acetophenone; that there is no other ingredient mixed with this chemical. It is further stated that the basic patents depend on the manner of packing this gas in cartridges and the method of vaporizing and atomizing this chemical on discharge.

Chloro-acetophenone is the standard tear gas used in all equipments for civil application of tear gases. It is not considered toxic but is classed as a persistent lacrimator. Of course, one cannot speak of the harmfulness of any chemical except in terms of concentration. In high concentration, it would be presumed that any irritating chemical would be harmful. As ordinarily used, however, chloro-acetophenone, or the fumes therefrom, is not regarded as toxic and has been so reported by the Chemical Warfare Service.

INFECTIONS FROM CUTTING OILS

To the Editor:—We have in our plant a great many operations in which we use a sulphur base cutting oil on the machines. This oil is used over and over again, being reclaimed from the scrap by a centrifugal separator. Many of these operations require that the operators have their hands and arms continually in the oil and at times there seem to be epidemics of rashes similar to boils on the arms and hands. We wonder whether you know of any substance that we may place in the oil which will eliminate its infectious nature and still not injure its cutting qualities.

H. T. HOLLOWELL, JR., Jenkintown, Pa.

ANSWER.—The import of the term "sulphur base cutting oil" is not entirely clear. It is assumed that sulphonated oils may be employed or the cutting compound may contain hydrocarbon sulphonic acid. In any event, it is believable that the causation of dermatoses is the same as for cutting oils in general.

Three factors are of importance in relation to the production of these oil dermatoses: (1) skin abrasion by small particles of metal within the oil; (2) decomposition products of oils, including irritant aldehydes and acids; (3) the penetration of the worker's skin by the coating material in the absence of adequate personal hygiene.

The query suggests that metallic particles may be eliminated by the "centrifugal separator." If not, these particles are productive of multiple minute scratches on the skin of the hands and forearms, paving the way for the entry of bacteria. From the statement "this oil is used over and over again" it would seem highly probable that decomposition products are the likely initiating cause of the mentioned skin condition. Long continued use of cutting oils favors increasing amounts of chemical irritants. Chemical irritation paves the way for subsequent bacterial invasion and the formation of furuncles.

Bacteria may be found in cutting oils, but the numbers are not large and the same bacteria are present on the skins of workers practically at all times. No known germicidal agent

will effectively kill off the bacterial content of cutting compounds over any long period of time.

If machinists wash up carefully at the end of the work period, removing all traces of oil, and then reapply some bland fatty material, the likelihood of oil dermatoses will be much lessened.

The introduction of germicidal substances into cutting oils is not to be recommended. Little can be accomplished by sterilization of cutting oils. However, the filtration or centrifugation of oils is desirable in order to remove abrasive particles, together with the frequent testing and changing of oils, discarding all lots that contain irritant aldehydes and acids, and careful attention to the personal hygiene of machinists.

For further details reference is made to:

Causes of Skin Sores and Boils Among Metal Workers, an Investigation by the Houghton Research Staff, E. F. Houghton & Co.
McConnell, W. J.: Dermatosis Following the Use of Cutting Oils and Lubricating Compounds, *Pub. Health Rep.* **37**: 1773 (July 21) 1922.
The Prevention of Skin Troubles from Cutting Oils and Emulsions, Safe Practices, number 44, National Safety Council, 168 North Michigan Avenue, Chicago.

INDICATIONS FOR PHENOLPHTHALEIN AND CUMULATIVE EFFECT

To the Editor:—Have you any information as to whether the drug phenolphthalein is injurious or cumulative when used over a period of time? As it is found in many laxative preparations, and in view of the fact that a druggist told me that a leading drug concern said that it was, I thought you might be able to advise me in regard thereto. Kindly omit name.

M.D., New Jersey.

ANSWER.—Various types of skin eruption have been described, most especially a persistent erythema multiforme. This is common enough to make it necessary, in view of the extensive use of phenolphthalein, that one should always think of the possibility of a phenolphthalein eruption, when studying the etiology of a puzzling exanthem. Then there is the chance of excessive intestinal action. As the drug is chiefly excreted into the intestine by means of the bile, and reabsorbed from the colon, there is a tendency for its action to continue for several days. Hence, its continued daily use may lead to ultimate overaction with diarrhea, abdominal pains, tenesmus and bleeding. This is why phenolphthalein is contraindicated in the presence of hemorrhoids.

INHERITANCE OF SYPHILIS

To the Editor:—In the Encyclopedia Britannica, under the discussion of venereal diseases, the following statement is made: "In the syphilis of the offspring it is necessary to distinguish two classes of effects—there are the effects of general intra-uterine malnutrition, due to the placental syphilis of the mother, and there are the true specific effects acquired by inheritance from either parent and conveyed, along with all other inherited qualities, in the sperm elements or in the ovum." Please comment on this. Is it possible, in the strict sense of the term, for syphilis to be inherited? Is it possible for a child to have the disease as a result of a disease c - dition of the sperm or ovum?

M. W. E., Virginia.

ANSWER.—At present it may be said that there are no recognized inherited effects of syphilis in the strict sense of the term; that is, effects of the disease due to influence on the nuclear element of the ovum and sperm, effects on the fetus, and the like. For that reason it is improper to speak of hereditary or inherited sysphilis. The final decision of this question must, of course, await a better comprehension of the intoxications or developmental abnormalities which *Spirochaeta pallida* is capable of producing and also a better understanding of the details of its life cycle. At present it is mechanically inconceivable that *Spirochaeta pallida* as now known should invade either sperm or ovum as such without the complete destruction of the cell thus affected. If a rest form or *Spirochaeta pallida* of a granular or even ultramicroscopic type could be demonstrated, it would be conceivable that the sperm or the ovum might become the actual vehicle of transmission of the disease. At this time we know only of intra-uterine or placental infection and of infection in the process of birth. The former should be characterized by the term prenatal infection and the latter be spoken of strictly as congenital infection. The term hereditary syphilis, or heredosyphilis, has the standing of usage and will probably long remain in the language, but it is, so far as present knowledge of the disease goes, a misnomer. The factors of malnutrition of the fetus due to placental syphilis and of structural changes in the fetus and the growing child resulting from presumably endocrine dystrophies induced by the infection are moot points about which it is unwise to make positive statements at present. Only some of the extreme members of the French school who accept third and fourth generation syphilis as clinically recognizable would be willing to subscribe without qualification to the statement in the Encyclopedia Britannica that "there are true specific effects acquired by inheritance from either parent and conveyed, along with all other inherited qualities, in the sperm elements or in the ovum." The only way this description could be answered would be by the supposed gradual increase in resistance to the disease which has hypothetically, at least, modified its clinical behavior over the centuries during which syphilis has been under observation. This type of argument for true hereditary influence in the infection is extremely tenuous and weak.

EFFECTS OF ALCOHOL AND CANNABIS DURING LABOR

To the Editor:—1. If alcohol is taken to a point of intoxication during labor, what effect will it have on labor and on the new-born child? 2. If cannabis is taken to a point of intoxication during labor, what effect will it have on labor and on the new-born child?

STANTON S. HOECHSTETTER, M.D., New Brighton, Pa.

ANSWER.—1. Large quantities of alcohol sufficient to intoxicate a woman in labor will, in most instances, produce a considerable diminution or a total abolition of the pain due to the uterine contractions. In some cases a deep sleep will result. Since there is nearly always a loss of self control and the will power is weakened, the patient may become unruly, there will be difficulty in maintaining asepsis during the actual delivery, and the patient may even injure the new-born child by her uncontrolled manipulations. According to Rosemann, the amount and quality of the milk are unaffected by the administration of alcohol. It is hardly likely that a baby born of an alcoholically intoxicated mother will show any abnormalities. According to Cushny, alcohol can be given to children in relatively larger amounts than to adults.

2. Cannabis is used as an intoxicant in Asiatic countries and in Africa under such names as hashish and bhang by from one to two hundred million people. Its chief effects are on the central nervous system. There is a mixture of depression and stimulation similar to that occasionally seen under morphine. Soon after its administration the patient passes into a semiconscious state in which judgment is lost and vivid dreams occur. The sensation of pain is distinctly lessened or entirely absent and the sense of touch is less acute than normally. Hence a woman in labor may have a more or less painless labor. If a sufficient amount of the drug is taken, the patient may fall into a tranquil sleep from which she will awaken refreshed. Some degree of tolerance for this drug is rapidly acquired and death from acute poisoning is rare. As far as is known, a baby born of a mother intoxicated with cannabis will not be abnormal in any way.

UNDESCENDED TESTICLE

To the Editor:—1. Is the operation more serious for undescended testicle at the age 21 if one is not yet sterile? 2. How long can one remain in this condition without becoming sterile? 3. How long would it take one to recover from the operation sufficiently enough to leave the hospital and get about. Would it be necessary to wear a truss for a while? 4. Would the incision weaken the abdominal wall any? 5. If one has undescended testicles and hernia, can they be taken care of at the same time? 6. If the cord or attachment to the testicles is not long enough, can it be lengthened in any way?

M.S., Illinois.

ANSWER.—1. The operation at 21 is no more serious than for an ordinary hernia which frequently accompanies the condition. It is a more painstaking operation and requires a little more time to perform it.

2. According to the experimental work of Moore at the University of Chicago, it is probable that adults are sterile if the testicles are still within the abdomen. There are no reliable data concerning the results of the double operation done in adults but isolated reports lead one to believe that, unless there is great atrophy, sterility is corrected if the testes can be brought down to their proper position.

3. Operation for this condition requires hospitalization of the patient for about ten days. There is no necessity for the use of a truss afterward.

4. Correction of the condition is not apt to weaken the abdominal wall. On the contrary, it strengthens it as a coexistent hernia if present should be repaired at the same time.

5. The repair of the hernia which often accompanies the condition is a part of the operation for undescended testes.

6. The testicles are attached within the abdomen by a cord composed of the tube (vas) which carries the spermatozoa from the testicle to the urethra and a number of blood vessels held together by a connective tissue. The vas is almost invariably long enough and the lengthening of the remainder of the cord can be accomplished by careful dissection. In most instances, simply the unraveling of this binding tissue allows sufficient lengthening of the cord to permit the placing of the organ in its proper position.

PYLOROSPASM AFTER INJECTION OF MORPHINE

To the Editor:—I have three female patients who have had their gallbladders removed. Each one on occasion has suffered from pain due to various causes which required a hypodermic injection of morphine sulphate. In each instance this injection of morphine causes a severe cramp in the stomach which required another injection to relieve that. Can you tell me why this should be so? Before the gallbladders were removed, morphine did not affect these patients that way. Please omit name.

M.D., North Carolina.

ANSWER.—Morphine causes pylorospasm; and the observed effect would probably have to be explained by assuming that, in some manner—possibly by the formation of adhesions—the cholecystectomies increased the tendency to pylorospasm and its severity. Simultaneous administration of atropine hydrobromide might possibly prevent this cramp.

FORMULA FOR SKIN PEEL

To the Editor:—In Queries and Minor Notes (THE JOURNAL, May 18, 1929, p. 1699) you recommended the following formula for a skin peel:

	Gm. or Cc.
Mercuric chloride	0.05
Zinc sulphate	0.3
Tincture of benzoin	...
Alcohol	...
Water	aa 10.0

I would greatly appreciate information as to a suitable way of compounding this prescription. I have tried different ways and each time either a gummy substance or crystals precipitate immediately.

Z. P. SALTZMAN, M.D., Los Angeles.

ANSWER.—The inquiry was referred to the American Medical Association Chemical Laboratory, which replied as follows: A large number of tests were made in the A. M. A. Chemical Laboratory. Irrespective of the method of mixing the product, it was found that the prescription was incompatible and the precipitate always resulted. It is the opinion of the A. M. A. Chemical Laboratory that, in the prescription given, the use of 10 cc. of tincture of benzoin is the main cause of the incompatibility. In the opinion of the laboratory, the prescription should have been:

	Gm. or Cc.
Mercuric chloride	0.05
Zinc sulphate	0.3
Alcohol	15.0
Water	15.0

Tincture of benzoin sufficient to cause turbidity.

Of course, it is not to be expected that an aqueous alcoholic solution containing much tincture of benzoin would be clear. In pharmaceutic practice it is common to add tincture of benzoin drop by drop until cloudiness appears. It should not be present in sufficient amount to cause the gum to precipitate out. Of course, the relatively large amount of alcohol in this prescription would hold relatively large amounts in solution before precipitation would take place.

ZINC IN DRINKING WATER

To the Editor:—In the United States Public Health Service Bulletin entitled "Drinking Water Standards," reprint 1029 from *Public Health Reports*, on page 5 under section 3, "As to Physical and Chemical Characteristics," the following statement appears: "Where such analysis shows the presence of lead, copper or zinc in excess of the limits specified in appendix 4, this shall constitute ground for rejection of this supply." Under appendix 4, page 25, zinc specification reads as follows: "Zinc shall not exceed five parts per million." I have recently had occasion to analyze samples of water for zinc content coming from both brass and galvanized piping. These samples have shown a zinc content above the limits specified by the United States Public Health Service and the American Public Health Association. I am interested in learning whether there are any instances of the actual poisoning of persons from drinking water containing more than five parts per million of zinc. If you know of any such cases, will you please let me have the reference covering them.

R. M. PALMER, Chemical Engineer, New York.

ANSWER.—Zinc compounds are sometimes found in natural waters, particularly in regions where the ore of this metal is known to occur. However, the presence of zinc in drinking water is due more frequently to the action of the water on brass or galvanized pipes. Comparatively little is known concerning the exact conditions under which waters may attack and dissolve this metal.

The data concerning the poisonous action of waters containing zinc are meager. Thresh described a water supply which contained zinc to the extent of about 4 parts per million and which never gave any indications of affecting consumers. He also investigated another water that was supposed to be concerned with constipation and found it contained about "3 grains of zinc carbonate per gallon" (about 25 parts per million of zinc). Hazen has reported the continued use of a water containing 17 parts per million of zinc with no apparent harmful effects. Mason states that he has been "unable to trace any evil effect due to the presence of zinc in drinking water, even when the quantity rose as high as 23 parts per million in a water which is in constant use."

The standards as promulgated by the U. S. Public Health Service represent the judgment of the advisory committee as to what constitutes a safe water. It should not be inferred that every water containing more than the specified limit is necessarily a dangerous one. A certain margin of safety must be recognized in such standards, so that the limit of 5 parts per million for zinc represents a standard well below the danger line. It is probable that in most instances this standard can be adhered to.

TREATMENT OF NEPHRITIS

To the Editor:—In discussing the so-called salt free diet, now advocated by some in tuberculosis as well as in some forms of nephritis and hypertension, the following questions arose: 1. If a patient on a "salt-free" (NaCl) diet for nephritis should take for "heartburn" half teaspoonful doses of sodium bicarbonate four or five times a day, would enough sodium chloride be formed in the stomach and absorbed to nullify the possible benefits of the low salt intake? 2. What would be the best agents to neutralize excess free hydrochloric acid in this case? 3. What would be the best agents to render the urine alkaline in the same case? 4. Would "Citrocarbonate" be satisfactory for either or both purposes?

GILBERT S. BOVARD, M.D., Sierra Madre, Calif.

ANSWER.—1. The sodium ions introduced would act like the sodium ions taken in the form of sodium chloride and to this extent antagonize possible benefits of low salt intake.

2. Magnesium oxide or precipitated calcium carbonate.

3. Magnesium oxide, unless the required dose should be too laxative; then the dose should be reduced and associated with potassium acetate.

4. No. While the exact composition of this proprietary mixture is not stated, the advertisements claim that it contains "the four bases in the same proportion as they exist in blood plasma." This must mean that sodium chloride is in large excess. Hence, the preparation must be contraindicated in conjunction with a salt-free diet.

TREATMENT OF INTESTINAL INTOXICATION

To the Editor:—What is the status of treatment for so-called intestinal toxemia? Has any one really worked out the comparative value of treatments such as (1) colonic irrigation with particular reference to the internal bath, which used to be considered dangerous, productive of dilatation of the colon, but has the endorsement of some excellent men today; (2) regulation of the intestinal rate, as recommended by Burnett of Boston; (3) use of Battle Creek treatment (lactodextrin)? What authoritative literature is available? Please use initials only.

S. J. B.

ANSWER.—The treatment for so-called intestinal toxemia is still in a chaotic state. Every pharmaceutic house has its pet drug, and physicians and surgeons have both advised more or less radical measures for its relief. When one realizes that intestinal intoxication is a complex condition, it is not surprising that nothing definite has as yet been advised for its treatment. It is not easy to determine the origin of intestinal intoxication. We do know that the type of food eaten and infective material entering the intestinal tract in food and from the upper air passages and teeth, diseases of the gallbladder and appendix, bands of adhesions, and constipation due to various nervous disorders are all factors in the production of intestinal intoxication. The types of intestinal flora are important in the question of the increased intestinal putrefaction. The use of acidophilus cultures in various forms to produce aciduric flora in the intestinal tract is at present the most hopeful form of treatment. No one has worked out the comparative value of the treatments mentioned. There is an enormous literature on this subject, but nothing authoritative.

TREATMENT OF KIDNEY THAT IS IMPERMEABLE TO SOLIDS

To the Editor:—Have you anything new to suggest for poor elimination of solids by the kidneys? The specific gravity of the urine ranges from 1.005 to 1.010 and is persistent; it is light colored, of acid reaction, without albumin and few solids. Also when there is a persistent alkaline reaction?

C. J. NEWCOMB, M.D., Bellefonte, Pa.

ANSWER.—Ammonium chloride as well as calcium chloride, in large and liberal doses, has an acidifying tendency on the urine; they may also cause an increased elimination of solids if the kidney is capable of responding to such appeal. The xanthine bodies, such as theobromine, may also be tried, though with even less prospect of success. A kidney that is relatively impermeable to solids needs more especially to be spared, as much as possible, the elimination of solids by means of salt poor and low protein diet.

If urine is to be rendered acid, sodium acid phosphate is an excellent agent for the purpose.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Regular Board. Little Rock, May 13-14, 1930. Sec., Dr. S. J. Albright, Searcy, Ark. Homeopathic Board. Little Rock, May 13, 1930. Sec., Dr. Allison Pringle, Eureka Springs, Ark. Eclectic Board. Little Rock, May 13, 1930. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith, Ark.

MINNESOTA: Minneapolis, April 15-17, 1930. Sec., Dr. E. T. Sanderson, 524 Lowry Medical Arts Bldg., St. Paul, Minn.

NEBRASKA: Omaha, May 6-7, 1930. Basic Science. Sec., Mr. Ernest M. Pollard, Lincoln, Neb.

NEVADA: Carson City, May 5-7, 1930. Sec., Dr. Edward E. Hamer, Carson City, Nev.

NEW MEXICO: Santa Fe, April 14-15, 1930. Sec., Dr. W. T. Joyner, Roswell, N. M.

New York September Examination

Mr. H. J. Hamilton, chief of professional examinations of the Board of Medical Examiners of New York, reports the written examination held at Albany, Buffalo, New York City and Syracuse, Sept. 23-26, 1929. The examination covered 9 subjects and included 10 questions. An average of 75 per cent was required to pass. Two hundred and eighteen candidates were examined, of whom 161 passed and 57 failed. Fourteen physicians were licensed by endorsement of credentials. The following colleges were represented:

College	PASSED Year Grad.	Number Licensed
University of Colorado School of Medicine	(1929, 2)	2
Yale University School of Med.	(1924) (1928, 2) (1929, 2)	5
Georgetown Univ. School of Med.	(1927) (1928, 4) (1929, 6)	11
George Washington University Medical School	(1929, 8)	8
Howard University School of Medicine	(1928) (1929)	2
University of Illinois School of Medicine	(1929, 2)	2
University of Louisville School of Medicine	(1927)	1
Tulane Univ. of Louisiana School of Med.	(1928) (1929, 3)	4
Johns Hopkins University School of Med.	(1927) (1928, 2)	3
University of Maryland School of Medicine	(1929, 7)	7
Boston University School of Med.	(1927) (1928, 2) (1929, 3)	6
Harvard University Medical School	(1929)	1
Tufts College Medical School	(1927) (1928) (1929, 7)	9
University of Michigan Medical School	(1926)	1
St. Louis University School of Med.	(1927) (1928) (1929, 4)	6
University of Nebraska College of Medicine	(1925)	1
Albany Medical College	(1929, 3)	3
Columbia University College of Physicians and Surgeons	(1928, 4) (1929, 8)	12
Cornell University Medical College	(1928, 3) (1929, 10)	13
Long Island College Hospital	(1929, 4)	4
New York Homeopathic Med. Coll. & Flower Hosp.	(1929, 9)	9
Syracuse University College of Med.	(1911) (1928, 2) (1929, 2)	5
University and Bellevue Hosp. Med. College.	(1928) (1929, 9)	10
University of Buffalo School of Medicine	(1929, 2)	2
Western Reserve University School of Medicine	(1928)	1
University of Oregon Medical School	(1929)	1
Jefferson Medical College	(1926) (1929)	2
Temple University School of Medicine	(1928)	1
Women's Medical College of Pennsylvania	(1924) (1927)	2
Medical College of the State of South Carolina	(1929)	1
Baylor University College of Medicine	(1929)	1
University of Texas School of Medicine	(1926) (1928)	2
University of Vermont College of Medicine	(1929, 2)	2
Medical College of Virginia	(1917) (1929, 2)	3
University of Virginia Department of Medicine	(1929)	1
Marquette University School of Medicine	(1929)	1
University of Vienna Faculty of Medicine	(1928)*	1
Queens University Faculty of Medicine	(1929, 2)	2
University of Western Ontario Faculty of Medicine	(1928)	1
University of Breslau Faculty of Medicine	(1921)*	1
Royal University of Bologna Faculty of Medicine	(1927)*	1
University of Rome Faculty of Medicine	(1929)*	1
University of Edinburgh Faculty of Medicine	(1929)*	1
University of Zurich Faculty of Medicine	(1925)*	1
University of Stamboul Faculty of Medicine	(1919)*	1
Osteopaths		6

College	FAILED Year Grad.	Number Failed
Georgetown University School of Medicine	(1927) (1929, 6)	7
George Washington University Medical School	(1928, 2)	2
Howard University School of Medicine	(1926) (1929, 2)	3
Loyola University School of Medicine	(1929)	1
University of Illinois School of Medicine	(1928)	1
Indiana University School of Medicine	(1928)	1
University of Louisville School of Medicine	(1928)	1
Tulane University of Louisiana School of Medicine	(1922)	1
Johns Hopkins University School of Medicine	(1927)	1
University of Maryland School of Medicine	(1929)	1
Tufts College Medical School	(1927)	1
University of Michigan Medical School	(1925)	1
Columbia Univ. College of Phys. and Surgs.	(1906) (1929)	2
Cornell University School of Medicine	(1929)	1
University of Buffalo School of Medicine	(1929)	1
New York Homeo. Med. Coll. & Flower Hosp.	(1916) (1929, 2)	3
Hahnemann Med. Coll. & Hosp. of Philadelphia	(1926) (1929)	2
University of Vermont College of Medicine	(1925)	1
Queens University Faculty of Medicine	(1927)	1
University of Toronto Faculty of Medicine	(1928)	1
University of Paris Faculty of Medicine	(1928)	1
University of Tubingen Faculty of Medicine	(1927)*	1
University of Athens Faculty of Medicine	(1924)*	1
University of Budapest Faculty of Medicine	(1917)*	1
National University of Ireland Faculty of Medicine	(1927)	1
University of Bologna Faculty of Medicine	(1928)*	1
University of Rome Faculty of Med.	(1921)* (1923)* (1925)*	3
Univ. of Naples Fac. of Med.	(1921) (1923) (1925)* (1927)*	4
University of Palermo Faculty of Medicine	(1921)	1
Odessa State Medical Institute	(1922)	1
University of Leningrad Faculty of Medicine	(1922)*	1
University of Saratov Faculty of Medicine	(1922)*	1
University of Spain Faculty of Medicine	(1920)*	1
Osteopaths		6

College	ENDORSEMENT OF CREDENTIALS Year Grad.	Endorsement of
Howard University School of Medicine	(1921)	N. Carolina
University of Illinois School of Medicine	(1905)	Texas
Harvard University Medical School	(1919)	Mass.
Tufts College Medical School	(1928)	N. B. M. Ex.
University of Michigan Medical School	(1914)	Michigan
Columbia University College of Phys. and Surgs.	(1926, 2)	N. B. M. Ex.
University of Pennsylvania School of Medicine	(1923)	N. Carolina
Baylor University College of Medicine	(1924)	Texas
University of Virginia Dept. of Med.	(1926) Virginia, (1927)	N. B. M. Ex.
University of Heidelberg Faculty of Medicine	(1908)	Colorado
University of Munich Faculty of Medicine	(1913)	†
University of Lisbon Faculty of Medicine	(1900)	Mass.

* Verification of graduation in process.
† Diploma endorsed.

Arkansas May Reciprocity Report

Dr. Sam J. Albright, secretary of the Board of Medical Examiners of Arkansas, reports 16 physicians licensed by reciprocity in May, 1929. The following colleges were represented:

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
University of Arkansas School of Medicine	(1909)	Oklahoma
Rush Medical College	(1917)	Illinois
State University of Iowa College of Medicine	(1915)	Iowa
University of Louisville School of Medicine	(1901)	Kentucky
Johns Hopkins University School of Medicine	(1926)	Penna.
Kansas City Medical College	(1892)	Missouri
Washington University School of Medicine	(1925, 2)	Missouri
Memphis Hospital Medical College	(1909) (1913)	Tennessee
University of Tennessee College of Medicine	(1927)	Mississippi
Vanderbilt University School of Med.	(1914) (1925) (1926)	Tennessee
Baylor University College of Medicine	(1924)	Texas
University College of Medicine, Richmond	(1909)	N. Carolina

Texas November Examination

Dr. T. J. Crowe, secretary of the Board of Medical Examiners of Texas, reports the written examination held at Dallas, Nov. 19-21, 1929. The examination covered 12 subjects and included 120 questions. An average of 75 per cent was required to pass. Thirteen candidates were examined and passed. Eighty-three physicians were licensed through reciprocity with other states. The following colleges were represented:

College	PASSED Year Grad.	Per Cent
University of Illinois School of Medicine	(1929)	83.9*
Washington University School of Medicine	(1928)	83.9
University of Oregon Medical School	(1924)	88
Vanderbilt University School of Medicine	(1929)	87.7
Baylor University College of Medicine	(1929)	79.7
Free School of Homeopathic Medicine, Mexico	(1924)	77.5†
National University of Mexico Faculty of Medicine	(1923) (1925) 83.5†, (1929) 77†, 80.7†	83.5†
University of Barcelona Faculty of Medicine	(1924)	77.3†
Osteopaths		‡, 83.7

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
Univ. of Arkansas Sch. of Med.	(1927) Louisiana, (1928)	Arkansas
Stanford University School of Medicine	(1929)	California
Yale University School of Medicine	(1912)	Connecticut
Atlanta College of Physicians and Surgeons	(1900)	Georgia
Chicago College of Medicine and Surgery	(1914)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1914)	Illinois
Rush Medical College	(1904) Kansas, (1912) (1919)	Illinois
Indiana University School of Medicine	(1928)	Indiana
State University of Iowa College of Homeo. Med.	(1910)	Iowa
State University of Iowa College of Medicine	(1919)	Iowa
Flint Medical College of New Orleans University	(1907)	Louisiana
Tulane University of Louisiana School of Medicine	(1926) (1903) (1906) (1918) (1925, 2) (1926, 2) (1928, 6) (1929, 2)	Oklahoma, Louisiana
College of Physicians and Surgeons, Baltimore	(1896)	Maryland
Johns Hopkins University School of Medicine.	(1924) (1928)	Maryland
Maryland Medical College, Baltimore	(1912)	Penna.
University of Maryland School of Medicine	(1916)	Penna.
Harvard University Medical	(1900) R. Island, (1920)	Michigan
Tufts College Medical School	(1919)	Mass.
Saginaw Valley Medical College	(1900)	Michigan
University of Michigan Medical School	(1914)	Michigan

Medical-Chirurgical College of Kansas City	(1900)	Kansas
St. Louis University School of Medicine	(1927) (1928, 2)	Missouri
Washington University School of Medicine	(1927)	Missouri
University of Nebraska College of Medicine	(1924)	Missouri
Eclectic Medical College of Cincinnati	(1897)	Oklahoma
University of Oklahoma School of Medicine	(1929)	Oklahoma
University of Oregon Medical School	(1928)	Oregon
Hahnemann Med. College and Hosp. of Philadelphia	(1911)	Ohio
Jefferson Medical College	(1927)	Penna.
University of Pennsylvania School of Medicine	(1928)	Penna.
Meharry Med. Coll. (1922) Michigan, (1928) Louisiana, (1928)		Tennessee
Memphis Hospital Medical College	(1904) (1908)	Mississippi
University of the South Medical Dept., Sewanee	(1905)	Oklahoma
University of Tennessee College of Med.	(1928, 2) (1929)	Tennessee
Vanderbilt University School of Medicine	(1923)	Illinois
(1927) S. Carolina, (1908) (1926) (1927) Tennessee		
Medical College of Virginia	(1927)	W. Virginia
University College of Medicine, Richmond	(1897)	N. Carolina
Milwaukee Medical College	(1911)	Wisconsin
Trinity Medical College, Toronto	(1897)	Indiana
University of Liége Faculty of Medicine, Belgium	(1927)	Vermont
University of Berlin Faculty of Medicine	(1927)	Illinois

Osteopaths..(6) Missouri, (1) Neb., (1) Oregon, (3) Illinois, (1) Mich.

* This applicant has completed his medical course and will receive his M.D. degree on completion of one year's internship in a hospital.
† Verification of graduation in process.
‡ No grade given.

Colorado July Examination

Dr. William W. Williams, secretary of the Board of Medical Examiners of Colorado, reports the written examination held at Denver, July 2, 1929. The examination covered 8 subjects and included 80 questions. An average of 75 per cent was required to pass. Thirty-seven candidates were examined and passed. Seven physicians were licensed through reciprocity with other states. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
University of Colorado School of Medicine	(1929)	82.8, 83.1, 83.5, 83.6, 84.6, 84.7, 84.8, 85, 85.1, 85.5, 86.1, 90.2, 86.8, 87.1, 87.2, 87.2, 87.5, 87.6, 87.7, 89, 89.5, 89.6, 89.6, 89.8, 90.6, 90.8, 92.5, 96.1
Washington University School of Medicine	(1929)	84.2
Creighton University School of Medicine	(1929)	76.5
Jefferson Medical College	(1928)	80.2
Osteopaths	79.1, 79.7, 80.6, 81.6, 83.2, 83.3	

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
Rush Medical College	(1905)	Illinois
University of Illinois School of Medicine	(1925)	Illinois
University of Nebraska College of Medicine	(1926)	Nebraska
Long Island College Hospital	(1905)	New York
Medical College of Ohio	(1897)	Ohio
University of Pennsylvania School of Medicine	(1923)	Florida
University of Tennessee College of Medicine	(1924)	Tennessee

Louisiana December Examination

Dr. Roy B. Harrison, secretary of the Board of Medical Examiners of Louisiana, reports the written and practical examination held at New Orleans, Dec. 12-14, 1929. The examination covered 10 subjects and included 100 questions. An average of 75 per cent was required to pass. Twenty-five candidates were examined and passed. Six physicians were licensed through reciprocity with other states. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Birmingham Medical College	(1915)	81.2
University of Arkansas School of Med.	(1927) 85.1, (1929) 85.9,	88.7
Howard University School of Medicine	(1928)	84.2
Loyola University School of Medicine	(1929)	82.6*
Tulane University of Louisiana School of Med.	(1929) 87.2, 87.6,	88.4
University of Minnesota Medical School	(1929)	84.8*
Washington University School of Medicine	(1929) 86.9,	89.9
Western Reserve University School of Medicine	(1929)	87.3
University of Pennsylvania School of Medicine	(1929) 86.9,	88.5
Meharry Medical College	(1929) 85.7,	86.5
Memphis Hospital Medical College	(1913)	84.5
University of Tennessee College of Med.	(1926) 88.2, (1929)	86.2
Vanderbilt University School of Medicine	(1929) 85.1,†	87.2
Baylor University College of Medicine	(1927)	88.9
University of Texas School of Medicine	(1927)	88.6
Queen's University Faculty of Medicine	(1924)	86.4†

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
Howard University School of Medicine	(1927)	Dist. Colum.
Rush Medical College	(1920)	Illinois
University of Louisville School of Medicine	(1928)	Kentucky
Univ. of Tennessee Sch. of Med.	(1922) Mississippi, (1923)	Arkansas
University of Texas School of Medicine	(1922)	Texas

* This applicant has an M.B. degree and will receive an M.D. degree on completion of one year's internship in a hospital.
† Temporary permit issued until completion of citizenship is established.

Book Notices

TONSIL SURGERY BASED ON A STUDY OF THE ANATOMY. By Robert H. Fowler, M.D., Chief Surgeon of the Tonsil Hospital, New York City. Cloth. Price, $10 net. Pp. 288, with 102 illustrations. Philadelphia: F. A. Davis Company, 1930.

This is a splendid contribution to the literature on the tonsils. In discussing the anatomy and physiology of the tonsils and the development of the tonsil operation itself, the author gives a detailed account, accompanied by many drawings, of the various types of tonsil operations. He analyzes the value of the various operations and their relations to the anatomy, together with research on tonsil anatomy. The complications of tonsil operations, such as hemorrhage, are then discussed. The best methods of anesthesia, microscopic study of the tonsils, hospital care of patients, and follow-up reports form the concluding chapters of the book, followed by a fairly complete bibliography. The author's main thesis is that an exact study of the anatomy of the tonsils is essential for the understanding of the conditions that arise, and, what is even more pertinent, the proper method of operation so that injury is not done to essential structures. He calls especial attention to the fact that muscles are attached to the capsule of the tonsil, notably those at its equator. He states that fibers of the lateral part of the palatopharyngeus muscle become caught in the lymphoid tissue at the junction of the upper and lower lobes of the tonsil. This connection, heretofore underscribed but nevertheless significant both for its function in retaining the tonsil in place and because it presents a difficulty in the surgical enucleation of the tonsil, is called the tonsillopharyngeus. "It is not a separate muscle," says the author, "any more than the salpingopharyngeus arising from eustachian tube is a separate muscle. Both are parts of the palatopharyngeus. The palatopharyngeus forms a continuous floor for the tonsil bed; thick and massive above, thin and semitranslucent below. In enucleation, the surgeon must cleave through the attachment of the tonsillopharyngeus, keeping close to the tonsil all the way from the upper to the lower lobe." The book is well arranged and has large, clear type, with beautiful illustrations. The author is insistent on a careful anatomic study of the structures involved in order that operations on the tonsils may show more successful results than are sometimes experienced at present. Both from its scientific attitude and from practical application of the principles of surgery this work stands out not only as a wonderful contribution to the study of the subject but also as a valuable aid to surgery.

ANATOMIE DES MENSCHEN: EIN LEHRBUCH FÜR STUDIERENDE UND ÄRZTE. Band I: Bewegungsapparat. Von Hermann Braus. Second edition, edited by Curt Elze. Cloth. Price, 36 marks. Pp. 822, with 387 illustrations. Berlin: Julius Springer, 1929.

Braus's Anatomie was planned for publication in three volumes. The first two were published in 1920 and 1923. Professor Braus died in 1924 before the publication of the third volume. Prof. Curt Elze undertaken the task of completing the third volume. He has also superintended the publication of a second edition of the first volume, which has just appeared. The first two volumes are worthy of the highest recommendation, especially to teachers of anatomy and to students who wish to understand thoroughly the structure of the living body. Few authors have shown such a clear grasp of the fundamental principles of animal structure, its evolution and its relation to function. Braus stated in his original preface that it would be a great step forward if anatomy, instead of being what unfortunately it now is to most physicians—a mass of misty memories associated with bad smells—might become a constant light and guide in the study of disease. His book contributes much to the forward movement for which he hoped and worked. In this edition, parts of the book are somewhat modified. The sections on bone and muscle mechanics have been completely revised by Professor Petersen of Würzburg. Many minor changes which Braus had planned have been made, and a volume index has been added. The book deserves to become popular with instructors, surgeons, physicians and students.

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MAMMALIAN PHYSIOLOGY: A COURSE OF PRACTICAL EXERCISES. By E. G. T. Liddell, D.M., and Sir Charles Sherrington, O.M., M.D., D.Sc., F.R.S., Wayniflete Professor of Physiology in the University of Oxford. Second edition. Cloth. Price, $5.50. Pp. 162, with illustrations. New York: Oxford University Press, 1929.

This is an excellently prepared outline for laboratory experiments in physiology for medical and other advanced students, particularly adapted to the restriction on the use of animals for teaching purposes in England. The experiments are outlined to be carried out after decapitation, wherever mammals are employed. Of particular value are the experiments on the reflexes and coordination of reflexes, a field in which Sherrington and his pupil Liddell have made such classic contributions. The book should be available for reference for medical and graduate students in every physiologic laboratory.

LE CŒUR: LES MÉDICAMENTS CARDIAQUES ET L'ÉLECTROCARDIOGRAMME. Recherches expérimentales du laboratoire de thérapeutique de l'Université de Liége. Par F. Henrijean, professeur, à l'Université de Paris. Préface de H. Waquez, professeur à la Faculté de médecine de Paris. Second edition. Paper. Price, 50 francs. Pp. 416, with 187 illustrations. Paris: Masson & Cie, 1929.

This edition of Henrijean's book is not only larger than the first; it is in a measure a new book because so much has been rewritten. It represents an enormous amount of painstaking experimental work. The author is not so much concerned with discovering the pharmacologic effects of drugs as in learning from these effects the facts that are concerned in the origin of the heart beat, the nature of cardiac contraction, and other physiologic properties of the heart. He has worked largely through the electrocardiograph. The scope of his investigations is shown by the topics covered by some of the chapters: anatomy of the heart; the electrocardiogram; the pneumogastric; action of epinephrine; action of the right and left vagi; action of cardiac drugs on the nerves of the heart; action of drugs on auricular contraction; electrocardiographic investigations; action of chloral, chloroform and ether on the electrocardiogram; physiology of the primitive heart; theory of cardiac contraction. All students of pharmacology and of cardiac physiology will wish to consult this valuable book.

FUNDAMENTALS OF PATHOLOGY. By Joseph Schroff, B.S., M.D., D.D.S., Associate Professor of Oral Pathology, School of Oral and Dental Surgery, Columbia University. Cloth. Price, $2.50. Pp. 109, with 40 illustrations. New York: William Albert Broder, 1929.

This short manual covers both general and oral pathology in outline form and is designed for use by students of oral hygiene. For this purpose and other short courses covering the same ground it is adequate and conveniently arranged. The text is marred in places by mistakes, such as the use of obligemia instead of oligemia on page 32. No mention is made of odontoma, enamel pearl and mottled teeth, and certainly the former deserves inclusion in such a book.

VORLESUNGEN ÜBER FUNKTIONELLE PATHOLOGIE UND THERAPIE DER NIERENKRANKHEITEN. Von Dr. Baron Alexander v. Korányi, o. ö. Professor-Direktor der III. medizin. Klinik der K. ung. Pázmán Peter Universität der Wissenschaften in Budapest. Paper. Price, 24 marks. Pp. 330, with 37 illustrations. Berlin: Julius Springer, 1929.

This comprises lectures delivered by the author and proves to be a complete and at the same time concise presentation of the subject of diseases of the kidney from the medical point of view. In the introductory chapters, modern conceptions of the production of the urine are extensively discussed and especial stress is laid on the important rôle of the extrarenal factors. In testing renal function the author prefers materials that are identical or in close relation to substances normally inciting functional activity. In discussing the methods and interpretation of clinical measurement of the blood pressure he calls attention to the fact that the location of the acme of the tonus is to be found in the arterioles. Hypertonicity is discussed in all its relations to renal disorders. In the classification of diseases the author follows the principles laid down by Vollhard, Fahr and Strauss. The section on treatment provides constructive criticism of traditional and modern therapeutic methods. The closing chapter contains an epitome of all the principles extensively discussed in the preceding chapters.

Medicolegal

Lay Testimony as to Autopsy Findings

(State v. Harkins (Mont.) 281 P. 551)

Harkins was convicted of manslaughter. He appealed to the Supreme Court of Montana. He alleged error on the part of the trial court in admitting the testimony of one Sipes as to the results of an autopsy done by Sipes on the victim of the affray. Sipes was not the graduate of a medical school nor had he been licensed to practice medicine in Montana. He was a minister, but according to the record he had "practiced medicine in practically all its phases" in Ekalaka, during his seven years' residence there. Sipes testified that he had studied medicine for fully thirty years on the theoretical side and gave the names of a considerable number of books on medicine and surgery which he had in his library. He said that during this thirty year period he had made use of practically every opportunity to visit hospitals, had attended medical lectures, had frequented dissecting rooms in several medical schools, and had witnessed operations in various hospitals in many places in the United States. He claimed that he had been present when surgeons consulted as to methods of operation and their effects on the body, and that he had studied the human body while the surgeons operated.

After the homicide the county attorney requested a physician to perform the autopsy, but he was unable to do so because of other duties. The attorney then requested Sipes to perform it. Sipes testified as to the number and location of several gunshot wounds and described with great particularity the courses of the bullets. After testifying that the carotid artery and the vagus nerve were the primary organs that were injured by the bullet that entered the neck, he testified that the vagus nerve is the principal nerve controlling the heart and that injury to it would destroy the functions of the heart. Later, however, when he was asked the effect of the bullet wound in the neck, objection was made on the ground that he was not qualified to answer. Similar objection was made when he was asked as to whether two of the wounds might not have been made by the same bullet. Both objections were overruled. In sustaining the action of the trial court in admitting Sipes's testimony, the Supreme Court of Montana said that the question is whether the witness who is called on to testify has the necessary experiential qualifications, no matter how he has come by them. The general rule is that any question as to the possession of the required qualifications by a particular witness is left to the determination of the trial court, and a decision of that court will not be reversed unless manifestly erroneous as a matter of law. The supreme court could not hold that the trial court erred as a matter of law in admitting Sipes's testimony.

The defendant admitted killing the deceased but claimed that he did so in self-defense. Whether the circumstances attending the homicide were such as to justify the fears of the defendant as a reasonable person, based on the belief that he was in imminent danger of losing his life or suffering great bodily harm, was a question of fact for the jury. The jury may have disbelieved that the deceased was running toward the defendant when the fatal shots were fired; on the contrary, it may have believed that he was retreating from the defendant and that the defendant was the aggressor. Veterans of the World War, who had seen men shot in battle, testified that a man shot with a rifle bullet while walking or running forward invariably fell forward, and if shot while stepping backward he fell backward. A physician, qualified to speak, gave similar testimony. Witnesses for the defendant, however, created some conflict with respect to this feature of the case. As explanatory of the testimony of witnesses who heard the shooting, experts testified that six shots could be fired from the defendant's pistol in approximately two seconds, and that, when the pistol was fired with that rapidity, it would not be possible to distinguish the shots and to count them. The conflict in the evidence on vital points brought the case properly before the jury for determination.

The judgment of the court below was affirmed.

Hospitals, Private: Liability for Negligence of Nurses.—Where the evidence shows that a patient in a hospital conducted for private gain was allowed to go for twenty-two hours without catheterization, notwithstanding her repeated complaints, and showed furthermore that pain would naturally result from the retention of her urine, it was for the jury to determine whether or not the pain and suffering of which the patient complained was due to neglect or resulted naturally from the operation to which she had been subjected. The supreme court of Oklahoma quoted with approval *Tulsa Hospital Association* v. *Juby*, 73 Okla. 243, 175 P. 519 to the effect that a hospital that is conducted for private gain receives patients under an implied obligation that it will exercise ordinary care and attention for their safety, which should be proportionate to the physical and mental ailments of the patient. Such a hospital is liable in damages to patients for the negligence of nurses and other employees.—*Skidmore v. Oklahoma Hospital (Okla.), 278 P. 334.*

Malpractice: Burn by Hot Water Bottle; Physician's Duty.—A hot water bottle used to warm a bed was negligently left in it. An unconscious patient, after an operation, was placed in the bed in such a position that the hot water bottle lay between her shoulders, and as a result she was severely burned. While she was recovering from the anesthetic, the operating surgeon came into the room. She complained to him bitterly of the pain between her shoulders, but he paid no attention to her complaint and saying that she "had a fine jag on," left the room. Thereafter she sued the surgeon for damages, and judgment was rendered in her favor. In his appeal to the Supreme Court of New Jersey, the surgeon contended that on his motions, duly made in the course of the trial, the case should have been dismissed, because no negligence on his part was shown. The Supreme Court held, however, that whether or not, when his patient complained, he owed her the duty of making an examination and, if he did owe her that duty, whether or not his failure to perform it was to some extent, at least, the cause of her injury were questions for the jury, not for the court. The refusal of the court to take the case from the jury was therefore proper and the judgment of the court below in favor of the patient was affirmed.—*Haring et al. v. Banks (N. J.), 146 A. 675.*

Medical Practice Acts: Prosecution; Evidence of Chiropractic License Properly Excluded.—No conflict exists between the penal provisions of the California medical practice act and the chiropractic practice act. The medical practice act makes it a misdemeanor to practice medicine, as therein defined, without a valid license to do so. The chiropractic practice act, on the other hand, authorizes one licensed under it to practice chiropractic, in accordance with certain specified standards, but it does not authorize such licentiates to practice medicine. Each act defines and prescribes penalities for offenses peculiar to its own sphere. If the holder of a chiropractic license exceeds the limits of that license and performs acts forbidden by the medical practice act to all but holders of licenses to practice medicine, the fact that he holds a license to practice chiropractic is wholly immaterial. So where a chiropractor is charged with violating the medical practice act it is proper for the court to exclude evidence of his license to practice chiropractic.—*People v. Machado (Calif.) 279 P. 228.*

Wills: Forgetfulness, Despondency, Insane Delusions and Testamentary Capacity.—Periods of forgetfulness and despondency do not necessarily indicate a lack of testamentary capacity. An insane delustion sufficient to affect testamentary capacity must be the product of a diseased mind, which comes into existence without reason or evidence to support it, and which is adhered to against reason and evidence. Testamentary capacity does not depend on an ability to reason logically or on freedom from prejudice. A belief may be illogical or preposterous, but it is not, therefore, evidence of insanity.—*Struve v. Struve (Calif.), 279 P. 846.*

Society Proceedings

COMING MEETINGS

Alabama, Medical Association of the State of, Montgomery, April 15-18. Dr. D. L. Cannon, 519 Dexter Avenue, Montgomery, Secretary.

American Association for the Study of the Feebleminded, Washington, D. C., May 5-10. Dr. H. W. Potter, Thiells, New York, Secretary.

American Association for Thoracic Surgery, Philadelphia, May 12-14. Dr. Duff S. Allen, Washington University Medical School, St. Louis, Secretary.

American Association of Anatomists, Charlottesville, Va., April 17-19. Dr. Lewis H. Weed, Johns Hopkins Medical School, Baltimore, Sec'y.

American Association of Genito-Urinary Surgeons, French Lick, Ind., May 22-24. Dr. Herman L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Association of Pathologists and Bacteriologists, New York, April 17-18. Dr. H. T. Karsner, 2085 Adelbert Road, Cleveland, Sec'y.

American Bronchoscopic Society, Atlantic City, May 27. Dr. Louis H. Clerf, 128 S. Tenth Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Quebec, May 12-14. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Mass., Sec'y.

American Gastro-Enterological Association, Atlantic City, May 5-6. Dr. Charles G. Lucas, 321 West Broadway, Louisville, Secretary.

American Gynecological Society, Hot Springs, Va., May 19-21. Dr. Floyd E. Keene, 133 S. 36th Street, Philadelphia, Secretary.

American Laryngological Association, Swampscott, Mass., May 22-24. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Atlantic City, May 28-30. Dr. Robert L. Loughran, 33 E. 63d Street, New York, Secretary.

American Ophthalmological Society, Hot Springs, Virginia, June 2-4. Dr. Emory Hill, 501 E. Franklin Street, Richmond, Va., Secretary.

American Otological Society, Swampscott, Mass., May 20-22. Dr. Thomas J. Harris, 104 E. 40th Street, New York, Secretary.

American Psychiatric Association, Washington, D. C., May 5-10. Dr. C. O. Cheney, Hudson River State Hospital, Poughkeepsie, N. Y., Sec'y.

American Society for Clinical Investigation, Atlantic City, May 5. Dr. Cyrus C. Sturgis, Simpson Memorial Institute, Ann Arbor, Mich., Sec'y.

American Surgical Association, Philadelphia, May 15-17. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

Arizona State Medical Association, Phoenix, April 24-26. Dr. D. F. Harbridge, 407 Goodrich Building, Phoenix, Secretary.

Arkansas Medical Society, Fort Smith, May 6-8. Dr. William R. Bathurst, 810 Boyle Building, Little Rock, Secretary.

Association of American Physicians, Atlantic City, May 6-7. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Del Monte, April 28-May 1. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities of North America, Washington, D. C., June 2-3. Dr. A. J. Chesley, State Board of Health, St. Paul, Minn., Secretary.

Connecticut State Medical Society, Hartford, May 21-22. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, May 7-8. Dr. C. B. Conklin, 1718 M Street, N. W., Washington, Secretary.

Florida Medical Association, Pensacola, May 6-7. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Augusta, May 14-16. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, April 26-28. Dr. A. N. Sinclair, Box 3373, Honolulu, Secretary.

Illinois State Medical Society, Joliet, May 20-22. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Marshalltown, May 14-16. Dr. T. B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Topeka, May 6-8. Dr. J. F. Hassig, Huron Building, Kansas City, Secretary.

Louisiana State Medical Society, Shreveport, April 29-May 1. Dr. P. T. Talbot, 1551 Canal Street, New Orleans, Secretary.

Maine Medical Association, Portland, June 2-4. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 22-23. Dr. John T. King, Jr., 1211 Cathedral Street, Baltimore, Secretary.

Mississippi State Medical Association, Vicksburg, May 13-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association, Hannibal, May 12-15. Dr. E. J. Goodwin, 1023 Missouri Building, St. Louis, Secretary.

National Tuberculosis Association, Memphis, Tenn., May 7-10. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.

Nebraska State Medical Association, Lincoln, May 13-15. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Concord, May 13-14. Dr. D. E. Sullivan, 7 N. State Street, Concord, Secretary.

New York, Medical Society of the State of, Rochester, June 2-4. Dr. Daniel S. Dougherty, 2 E. 103d Street, New York, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, April 28-30. Dr. L. B. McBrayer, Southern Pines, Secretary.

North Dakota State Medical Association, Bismarck, May 27-28. Dr. Charles MacLachlan, San Haven, Secretary.

Ohio State Medical Association, Columbus, May 13-15. Mr. Don K. Martin, 131 East State Street, Columbus, Executive Secretary.

Oklahoma State Medical Association, Shawnee, May 26-28. Dr. Claude A. Thompson, Barnes Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 5. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.

South Carolina Medical Association, Florence, May 6-8. Dr. E. A. Hines, Seneca, Secretary.

South Dakota State Medical Association, Sioux Falls, May 20-22. Dr. John F. D. Cook, Langford, Secretary.

Texas, State Medical Association of, Mineral Wells, May 6-8. Dr. Holman Taylor, Medical Arts Building, Ft. Worth, Secretary.

West Virginia State Medical Association, White Sulphur Springs, May 20-22. Mr. Joe W. Savage, Box 1541, Charleston, Executive Secretary,

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

5: 257-400 (Feb.) 1930

*Electrocardiogram in Coronary Disease. M. H. Nathanson, Minneapolis. —p. 257.

*Cardiac Response in Acute Diffuse Glomerulonephritis. I. J. Levy, New York.—p. 277.

*Characteristic Electrocardiograms and Roentgenograms in Arterial Hypertension. A. M. Master, New York.—p. 291.

*Effect of Nitroglycerin, Amyl Nitrite and Acetylcholine on Hypertension. F. R. Zeiss and W. A. Brams, Chicago.—p. 300.

*Circulation: II. Cardiac Output in Diseases of Heart and Under Influence of Digitalis Therapy. M. Ringer and M. Altschule, New York. —p. 305.

*Displacement of Left Nipple in Mitral Stenosis. S. P. Schwartz, New York.—p. 344.

Monophasic and Deformed Ventricular Complexes Resulting from Surface Applications of Potassium Salts. C. J. Wiggers, Cleveland.—p. 346.

Ventricular Fibrillation Caused by Electric Shock: II. Cinematographic and Electrocardiographic Observations of Natural Process in Dog's Heart. C. J. Wiggers, Cleveland.—p. 351.

Electrocardiographic Studies Before and After Chest Operations. R. B. Bettman and W. S. Priest, Chicago.—p. 366.

Rapid Ventricular Rhythm Produced by Pressure Over Precordium: Case. M. Goodman and A. C. DeGraff, New York.—p. 375.

Electrocardiographic Record of Paroxysmal Cardiac Irregularity as Manifestation of Thyroid Administration. H. T. Hyman, New York.—p. 383.

Electrocardiogram in Coronary Disease.—In an analysis made by Nathanson of the electrocardiographic tracings in sixty cases of coronary sclerosis, T wave inversion was found to be the most common abnormality, occurring in 88 per cent of the cases. A widened notched Q-R-S was present in 13.3 per cent. Attention is called to certain less definite changes, such as minor notching of the Q-R-S without widening and also low voltage. An attempt is made to evaluate the significance of these changes. Increase in auriculoventricular conduction time was comparatively rare and found associated only with curves of bundle-branch block. The most frequent arrhythmia was the extrasystolic type, which was present in 18 per cent. Auricular fibrillation was present in only 6.6 per cent and only in those cases showing evidence of congestive heart failure. Preponderance curves of the left ventricular type of definite or slight degree were noted in 60 per cent and slight right preponderance in only 3.3 per cent. The presence or absence of cardiac enlargement or congestive heart failure seems to have little effect on the type of electrocardiogram.

Cardiac Response in Acute Diffuse Glomerulonephritis.—Levy stresses the importance of the recognition of the presence of acute circulatory decompensation in the diagnosis and treatment of acute diffuse glomerulonephritis because the cardinal symptoms, namely, hypertension, edema, hematuria and renal insufficiency, as shown by nitrogen retention in the blood, may be absent. The pathologic changes in the kidney consequently may not be detected. Ten cases of this description are reported. The only clue to the diagnosis is obtained by a proper interpretation of the circulatory symptoms. The sudden advent of circulatory decompensation as evidenced by dilatation of the right side of the heart, pulmonary congestion, and an enlarged and tender liver should lead one to suspect the presence of acute nephritis. This applies particularly in cases in which valvular or coronary artery lesions are absent and no other cause for decompensation can be found. Although it is generally believed that the edema in acute diffuse glomerulonephritis is a "tissue disturbance," caused by some derangement of general metabolism, the fact must not be overlooked that water retention may also be due to the circulatory disturbance. The determination of this point is of extreme importance in deciding on the form of therapy to be pursued. Pulmonary edema may be the cause of death in acute nephritis. It may occur even though the structural changes in the kidney are not sufficient to produce complete renal insufficiency. The early recognition of the etiology of the circulatory symptoms may be the means of saving life. In addition to dietetic measures, proper cardiac supportive treatment should be undertaken. Often, rest in bed will suffice. The liberal use of caffeine products, such as theobromine sodiosalicylate, theocalcin and caffeine sodiobenzoate, and of digitalis is indicated.

Characteristic Electrocardiograms and Roentgenograms in Arterial Hypertension.—The electrocardiographic and teleroentgenographic records of 152 patients with hypertension have been studied by Master. The general mortality among these patients, covering a follow-up of three years, was 18 per cent. Seventy-four per cent of the patients showed left axis deviation in the electrocardiogram. The next most common finding was a combination of left axis deviation with T wave inversion in the first lead. This occurred in 36 per cent of the cases. The mortality rate in this group was 27 per cent. Every case of T wave inversion in the first lead was associated with left axis deviation. The high voltage electrocardiogram in hypertension was present in 22 per cent of all the cases. Among these patients the mortality was high—40 per cent. This electrocardiogram, when pure aortic insufficiency is not present, appears to be characteristic of long-standing hypertension. Of 106 patients in whom teleroentgenograms were taken, 78 per cent belonged to the so-called sthenic or hypersthenic types of habitus. The hypertension roentgenogram, characteristic of long-standing hypertension, shows an enlarged heart, an hypertrophied left ventricle, and an apparently dilated but actually tortuous aorta, with a prominent aortic knob. The left ventricle appeared hypertrophied on the roentgenogram in 48 per cent of the patients. In each case a left axis deviation was present in the electrocardiogram. The ascending aorta was apparently widened in 32 per cent of the cases.

Effect of Glyceryl Trinitrate, Amyl Nitrite and Acetylcholine on Hypertension.—Zeiss and Brams gave a series of patients with hypertension and renal involvement glyceryl trinitrate, amyl nitrite and acetylcholine after the blood pressure had been previously reduced to a fixed level by rest in bed, diet, and limitation of fluid intake. The results were controlled by a study of a similar series of normal persons. Glyceryl trinitrate, one-fiftieth grain (0.4 mg.) under the tongue, produced a fall in blood pressure in all the normal controls, but this effect was inconstant in the patients with hypertension. Amyl nitrite caused a fall in pressure in the controls and in the hypertensive cases in every instance, being effective also in those instances in which glyceryl trinitrate failed to act. A reaction in the form of a temporary rise to a level above that existing before the administration of the drug occurred in a large proportion of the patients with hypertension receiving amyl nitrite or glyceryl trinitrate. The controls receiving glyceryl trinitrate showed a similar reaction rise, but not those receiving amyl nitrite. This rise may be of some clinical value in cases of impending or actual cerebral hemorrhage. The effect of amyl nitrite was much more marked and lasted almost as long as that of glyceryl trinitrate, but headache, vertigo and flushing were more marked after the former drug. Acetylcholine was found to be inert in both the controls and the cases of hypertension, in contradistinction to the claims made in the literature.

Cardiac Output in Diseases of Heart and Under Influence of Digitalis Therapy.—The influence of digitalis in twenty-three cases is described by Ringer and Altschule. In nine cases with a sinus rhythm no beneficial effect on the reserve factors of the circulation was detected, with the single exception of a case of arteriosclerotic heart disease with cardiac insufficiency. In fourteen cases with auricular fibrillation and cardiac insufficiency, digitalis restored the ventricular rate and stroke volume to almost normal values but produced improvement to lesser degrees in the minute volume and arterial oxygen utilization. The significance of these observations in

relation to the dynamics of heart failure and the therapeutic action of digitalis is discussed.

Displacement of Left Nipple in Mitral Stenosis.—Upward and outward displacement of the left nipple is regarded by Schwartz as being specific for mitral stenosis. In a series of 200 consecutive patients with frank mitral stenosis, 130 men and seventy children, varying in age from 4 to 70 years, he has found this sign positive in more than 90 per cent of the cases. In some of these cases in addition to the outward displacement, he has noted the left nipple to be different from the right in size, shape and color. In several instances the left nipple was much smaller than the right, the areola was lighter and ovoid instead of round. He has not observed this sign in nine patients with isolated aortic insufficiency or in ten cases of congenital heart disease. He suggests that the displacement of the left nipple takes place as a result of the adjustment of the muscles and fascia overlying the bulging precordium.

American J. Psychiatry, Baltimore

9: 607-777 (Jan.) 1930

Hallucinations: Nature and Significance. C. M. Campbell, Boston.—p. 607.
Behavior Disorders in Chronic Epidemic Encephalitis. C. E. Gibbs, Kings Park, N. Y.—p. 619.
Migraine Equivalent. J. M. Nielsen, Battle Creek, Mich.—p. 637.
Rôle of Trauma in Various Neuropsychiatric Conditions. M. Osnato, New York.—p. 643.
Metabolic Rate in Emotional Moods Induced by Suggestion in Hypnosis. J. C. Whitehorn, H. Lundholm and G. E. Gardner, Waverley, Mass.—p. 661.
Widespread Pressure Atrophy of Brain and Probable Relation to Function of Pacchionian Bodies and Cerebrospinal Fluid Circulation. T. Fay and N. W. Winkelman, Philadelphia.—p. 667.
Relation of Extroversion-Introversion to Intelligence and Tuberculosis. C. A. Neymann, Chicago.—p. 687.
Language of Psychoses. W. A. White, Washington, D. C.—p. 697.
Empiric Determination of Certain Syndromes Underlying Praecox and Manic-Depressive Psychoses. T. V. Moore, Washington, D. C.—p. 719.
Postprohibition Alcoholic Psychoses in New York State. W. C. Garvin, Binghamton, N. Y.—p. 739.

Archives of Neurol. & Psychiatry, Chicago

23: 219-410 (Feb.) 1930

Forced Drainage of Central Nervous System. F. Fremont-Smith, T. J. Putnam and S. Cobb, Boston.—p. 219.
Tests for Sensibility. N. C. LaMar, Philadelphia.—p. 228.
*Myeloradiculitis: Seven Cases. I. Strauss and A. M. Rabiner, New York.—p. 240.
Paraplegia in Flexion with Subacute, Combined Degeneration of Cord. G. W. Hall and E. F. Hirsch, Chicago.—p. 257.
*Bilateral Acoustic Neurofibromas. W. J. Gardner and C. H. Frazier, Philadelphia.—p. 266.
Muscle Tone in Parkinsonian States. L. J. Pollock and L. Davis, Chicago.—p. 303.
Nature of von Recklinghausen's Disease and Tumors Associated with It. W. Penfield and A. W. Young, Montreal, Canada.—p. 320.
*Myasthenia Gravis with Status Lymphaticus and Multiple Thymic Granulomas. N. M. Alter and M. Osnato, New York.—p. 345.
*Allergy as Cause of Epileptiform Convulsions. G. L. Waldbott, Detroit.—p. 361.

Myeloradiculitis.—Seven cases of acute involvement of the posterior nerve roots and the spinal cord, with rapid recovery from all symptoms, are presented by Strauss and Rabiner. The relation of this myeloradiculitis to infections of the upper respiratory tract is emphasized. Comparison is made with a case of possible syphilitic origin in which laminectomy revealed a swollen cord of buttery consistency, with rapid recovery after spinal decompression. Acute invasion of the nerve roots and cord following mild infections of the upper respiratory tract offers a better prognosis than subacute or chronic infections such as syphilis. Mention is made of intravenous typhoid vaccine therapy. This was administered in some of the cases, and while no claims are made that the results were entirely dependent on this treatment, it is felt that further trial of this method of therapy is advisable.

Bilateral Acoustic Neurofibromas.—A family of five generations and 217 members is described by Gardner and Frazier, in which bilateral deafness was transmitted as a mendelian dominant character. Thirty-eight members were affected. Of these thirty-eight, fifteen subsequently became blind. Of the deaf and blind persons, four were examined prior to death and were found to have choking of the optic disks with secondary atrophy. Of the deaf persons, seven were personally examined by the authors. Five of these had entire absence of vestibular responses in the Bárány test. In the other two, a sluggish response was obtained from the left horizontal canal, but the remaining semicircular canals were nonfunctioning. In addition, four subjects were found with little or no impairment of hearing but with absent vestibular responses in the Bárány test. These Bárány observations, together with the neurologic signs which these persons presented, made the diagnosis of bilateral acoustic tumors practically indisputable. The two members of this family who came to necropsy had bilateral acoustic neurofibromas. The average age of onset of deafness was 20 years. The average age at death of affected persons in the second generation was 72; in the third generation 63, in the fourth 42 and in the fifth 28. Therefore, the condition was increasing in malignancy as transmission proceeded. There was practically no associated evidence of von Recklinghausen's disease in this family. The results of this investigation indicate that acoustic tumors take their origin on the vestibular portion of the eighth nerve.

Myasthenia Gravis with Status Lymphaticus and Multiple Thymic Granulomas.—In a case reported by Alter and Osnato, myasthenia gravis was associated with status lymphaticus. Multiple abnormalities of branchiogenic organs were present. A striking feature was the parenchymatous goiter with displacement and enlargement of parathyroid and thymic tissue. The multiple thymic nodules were the site of extensive inflammatory changes. The mediastinal nodule showed evidence of a process of longer duration than the accessory nodule. Study of the central and peripheral nervous system revealed nothing of significance. The striated muscles showed extensive lymphoid infiltration and atrophy of the fibers.

Allergy as Cause of Epileptiform Convulsions.—Two cases of epileptiform convulsions that alternated with asthmatic attacks are reported by Waldbott. It is held that the epilepsy was due to hypersensitiveness.

Archives of Ophthalmology, Chicago

3: 133-258 (Feb.) 1930

Development of Ophthalmology in Europe. E. Fuchs, Vienna, Austria.—p. 133.
New Astigmatic Chart. T. H. Odeneal, Beverly, Mass.—p. 148.
Exenteration of Ocular Contents by New Technic. R. O'Connor, Oakland, Calif.—p. 151.
Interpretation of Defects in Visual Field. J. N. Evans, New York.—p. 153.
Tattooing of Cornea with Gold and Platinum Chloride. D. K. Pischel, San Francisco.—p. 176.
Permeability of Lens Capsule. J. S. Friedenwald, Baltimore.—p. 182.
Iridotasis for Primary and Secondary Glaucoma. G. H. Bell, New York.—p. 194.
Sympathetic Ophthalmia. G. H. Burnham, Toronto, Canada.—p. 200.
Retrobulbar Neuritis. E. B. Dunphy, Boston.—p. 208.

Colorado Medicine, Denver

27: 69-114 (March) 1930

Intercostal Neuralgia of Abdominal Wall. J. B. Carnett, Philadelphia.—p. 72.
*Tick-Borne Infections in Colorado: II. Survey of Occurrence of Infections Transmitted by Wood Tick. F. E. Becker, Denver.—p. 87.

Tick-Borne Infections in Colorado.—Becker says that tick-borne diseases are prevalent throughout the mountainous regions of Colorado. Rocky Mountain spotted fever is an endemic disease in Colorado, cases having been observed as early as 1885. Reports of 211 cases with forty-nine deaths have been collected. An atypical infection following tick bite with characteristic constitutional symptoms, but without a skin eruption, is common in Colorado and is locally known as "Colorado tick fever." If this is an attenuated spotted fever, the definition of this disease must be modified to include cases without skin rash. Indolent ulcers frequently occur at the site of the tick bite. Transmission of tularemia by the bite of a wood tick has not been reported in Colorado. Tick paralysis is a rare disease in this state. The Weil-Felix agglutination reaction was found positive in several cases of typical Rocky Mountain spotted fever and of "Colorado tick fever." This test is valuable and should be made in all obscure infections following the bite of a wood tick.

Delaware State M. Journal, Wilmington

2: 19-38 (Feb.) 1930

Newer Studies of Diseases of Stomach. M. E. Rehfuss, Philadelphia.—p. 19.
Roentgen Study of Large Intestines. G. C. McElfatrick, Wilmington.—p. 26.

Indiana State M. Assn. Journal, Fort Wayne

23: 57-112 (Feb. 15) 1930

Abolition of Diabetic Coma in United States. E. P. Joslin, Boston.—p. 57.
Diagnosis of Allergic Diseases. H. S. Hatch, Indianapolis.—p. 63.
Carcinoma of Bladder. J. T. Short, Fort Wayne.—p. 65.
Influence of Accessory Sinus Disease on General Systemic Disturbances. M. Ravdin, Evansville.—p. 68.
Fish Tapeworm in Indiana: Four Cases. M. W. Lyon, Jr., South Bend.—p. 72.

Journal of Urology, Baltimore

23: 161-288 (Feb.) 1930

III. Function of Ureterovesical Valve and Experimental Production of Hydro-Ureters Without Obstruction. C. M. Gruber, St. Louis.—p. 161.
Pyelovenous Backflow in Human Kidney. F. Fuchs.—p. 181.
*Cancer of Prostate. R. Dossot, Paris.—p. 217.
Value of Young's Radical Operation for Carcinoma of Prostate. H. H. Young and J. A. C. Colston, Hagerstown, Md.—p. 246.
Relation of Urologic Diseases to Internal Medicine. H. G. Beck, Baltimore.—p. 247.
Concerning Diagnosis of Rarer Types of Obstructive Lesions in Male Urethra. E. G. Ballenger, O. F. Elder and H. P. McDonald, Atlanta, Ga.—p. 259.
Treatment of Certain Vesical Neoplasms by Intravesical Resection of Entire Bladder Wall with Peritoneal Coat. H. H. Young, Baltimore.—p. 269.
Congenital Obstructions of Deep Urethra: Two Cases. H. S. Browne, Tulsa, Okla.—p. 275.
Improved Phthaleinometer for Rapid Estimation of Phenolsulphonphthalein Test. H. H. Young and C. F. Elvers, Baltimore.—p. 281.
Gold Leaf Coated Ureteral Catheters. H. W. E. Walther, New Orleans.—p. 287.

Cancer of Prostate.—Dossot states that prostatic adenoma plays an important rôle in the pathogenesis of numerous cancers; in 11.6 per cent of cases it undergoes malignant transformation. Two types of prostatic cancer should be distinguished; urethroprostatic adenoid cancer, which develops from the adenomatous glands of the prostatic urethra, and true cancer of the prostate, which develops from the prostate itself. The latter may coexist with an adenoma. Cancers and adenomas are associated in 58.7 per cent of cases. Invasion of nearby organs and lymph glands always occurs in cancer of the prostate. These extensions are early, and before they can be recognized clinically the cancer has extended widely past the limits of the gland and has invaded the pelvic and abdominal lymph glands. Prostatectomy, radium therapy and radiotherapy have given only mediocre results, and cures lasting for more than three years are the exception. True cures can be obtained only in those patients operated on with a diagnosis of adenoma in whom histologic examination shows the existence of cancer. When cancer has progressed sufficiently to be recognized it has, generally speaking, extended widely. Therefore, it is prudent at the present state of knowledge to limit efforts to palliative therapy, the passage of sounds and cystostomy.

Kentucky M. Journal, Bowling Green

28: 47-124 (Feb.) 1930

Diverticulitis of Sigmoid. W. P. Sights, Paducah.—p. 98.
Management of Surgical Diabetic. E. B. Bradley, Lexington.—p. 100.
Factors Influencing Surgery. C. W. Dowden, Louisville.—p. 105.
Perforative Duodenal Ulcer: Diagnosis and Treatment. J. G. Sherrill, Louisville.—p. 108.
Treatment of Duodenal Fistula: Case. J. M. Salmon and W. L. Gambill, Ashland.—p. 112.
Reducing Mortality of Acute Intestinal Obstruction. F. K. Boland, Atlanta, Ga.—p. 116.

Medical Journal & Record, New York

131: 181-232 (Feb. 19) 1930

Affective-Respiratory Factors in Catatonia. E. J. Kempf, New York.—p. 181.
Chronic Arthritis and Rheumatoid Conditions. B. L. Wyatt, Tucson, Ariz.—p. 185.
Cerebellar Cyst: Case. J. I. Wiseman and H. Lerner, Pittsburgh.—p. 188.
Romance of Radium. H. Goodman, New York.—p. 190.
Pregnancy with Complications: Breech Presentation; Forceps; Intracranial Hemorrhage: Case. D. H. Bessesen, Minneapolis.—p. 193.
Evolution Disproves Heredity in Mental Diseases. L. J. Doshay, New York.—p. 194. (C'cn.)
Rural Community and Physician. R. L. Jen..ins, Chicago.—p. 197.
Palatal Palpebral Reflex. C. J. Imperatori, New York.—p. 198.
High Blood Pressure: What It Is and How to Avoid It. J. F. Halls-Dally, London.—p. 199.
Arterial Hypertension. J. W. Shuman, Los Angeles.—p. 202.
Eyegrounds in Arterial Hypertension. C. C. Cowin, Los Angeles.—p. 204.
Kidneys and Arterial Hypertension. A. E. Mark, Los Angeles.—p. 206.
Pathology of Arterial Hypertension. V. L. Andrews, Los Angeles.—p. 207.
Endocrines and Arterial Hypertension. R. W. Meals, Los Angeles.—p. 208.
Autonomic Nervous System in Hypertension. M. Wishnofsky, New York.—p. 209.
Angina Pectoris. K. F. Wenckebach, Vienna, Austria.—p. 212. (C'td.)
*Comparative Study of Monoiodocinchophen, Cinchophen and Salicylates in Treatment of Arthritis. P. G. Potenciano, Eloise, Mich.—p. 215.
Epilepsy and Former Treatment. W. R. Riddell, Toronto, Canada.—p. 217.

Monoiodocinchophen, Cinchophen and Salicylates in Treatment of Arthritis.—A comparative study made by Potenciano of twenty-seven arthritic cases treated with monoiodocinchophen, cinchophen and sodium salicylate shows monoiodocinchophen to be the most effective. The marked relief of pain, reduction of swelling and restoration of motion, together with the systemic changes observed, he thinks are apparently due to the presence of iodine in the cinchophen molecule.

Medicine, Baltimore

9: 1-117 (Feb.) 1930

Ephedrine and Related Substances. K. K. Chen and C. F. Schmidt, Philadelphia.—p. 1.

Michigan State M. Soc. Journal, Grand Rapids

29: 151-270 (March) 1930

Meningococcus Meningitis in Michigan. J. E. Gordon, Detroit.—p. 151.
Thymophysin in Obstetrics. L. W. Haynes, Detroit.—p. 158.
Indications for Operative Treatment in Acute Traumatic Myelitis Due to Fracture of Spine. E. S. Gurdjian, Detroit.—p. 165.
Present Status of Treatment of Joint Tuberculosis. F. C. Kidner, Detroit.—p. 169.
Cholangeitis. E. S. Judd and A. H. McIndoe, Rochester, Minn.—p. 174.
Fused Kidney with Hydronephrosis and Hydro-Ureter. G. C. Burr, Detroit.—p. 180.
*Postoperative Pulmonary Atelectasis. J. A. Moore, Asheville, N. C.—p. 182.
Michigan's Department of Health. G. L. Kiefer, Lansing.—p. 190.

Postoperative Pulmonary Atelectasis.—Eleven cases are reported by Moore and of these the following conditions are said to be new to the literature as causes of atelectasis: phrenicectomy, iodized oil injection of the tracheobronchial tree, abdominal sympathectomy, and rupture of a paravertebral abscess into a bronchus. He believes that the routine use of carbon dioxide inhalations after anesthetics will reduce the incidence of pulmonary complications. He has found that inhalations of carbon dioxide and measures to make patients cough will relieve the condition in the majority of cases.

Missouri State M. Assn. Journal, Fulton

27: 97-150 (March) 1930

Etiology of Cough. S. Pritchard, Battle Creek, Mich.—p. 97.
*Spinal Fluid in Epidemic Meningitis. C. R. Ferris and P. F. Stookey, Kansas City.—p. 98.
Closure Without Drainage in Abdominal Surgery. C. Potter, St. Joseph.—p. 100.
Rodent Ulcer. R. L. Sutton, Jr., Kansas City.—p. 103.
Noncalculus Obstruction of Upper Urinary Tract. N. S. Moore, St. Louis.—p. 112.
Serologic Tests in Serum Diagnosis of Syphilis. N. Nagle, St. Louis.—p. 118.
Aneurysms. E. J. Schisler, St. Louis.—p. 121.
Present Knowledge of Etiology of Trachoma. C. Weiss, St. Louis.—p. 125.
Old Dislocations at Shoulder. J. A. Key, St. Louis.—p. 129.

Spinal Fluid in Epidemic Meningitis.—Ferris and Stookey studied specimens of the spinal fluid from forty-five patients with epidemic meningitis of whom twenty-seven recovered and eighteen died, a mortality rate of 40 per cent. The average spinal fluid cell count on admission was 16,903, the maximum count was 57,000 and the minimum count was 415. In fourteen cases the cell count on admission was 20,000 or greater.

The differential cell count showed polymorphonuclear leukocytes to be present in almost all cases in a percentage of 95 or more. The meningococci were identified in all cases except one, in which the patient had received the initial intraspinal treatment of antimeningococcic serum before admission. The average white blood count was 22,609, ranging from a maximum of 45,000 to a minimum of 4,000. As a rule epidemic meningitis produces a pronounced leukocytosis. In one of the forty-five cases they encountered the syndrome of Froin. The few cubic centimeters of fluid that could be withdrawn on spinal puncture were xanthochromic, appeared much like blood serum, and clotted almost immediately in the tube. Coagulation of this fluid was almost completely inhibited when some of it was received in a 2.5 per cent solution of sodium citrate. It has been their experience to find that in cases presenting this syndrome, death usually ensues within forty-eight hours after the spinal fluid is first observed to clot. In twenty-seven patients who recovered, treatment was stopped in two with spinal fluid cell counts of 6,300 and 2,650, and with polymorphonuclear percentages of 87 and 66 respectively. In the remaining twenty-five cases the cell counts ranged from 90 to 1,800, an average of 871 cells. The precentage of polymorphonuclear cells in differential count ranged from 13 to 90, with an average of 53.6. This gives an average of 46.4 per cent of mononuclear cells. The authors consider, therefore, a spinal fluid which is free from organisms and whose total cell count is approximately 1,000, with a differential count of nearly 50 per cent or more of lymphocytes, as a criterion for the cessation of treatment. They interpret the appearance of mononuclear cells in the spinal fluid in increasing proportions as a good prognostic sign.

Nebraska State M. Journal, Norfolk

15: 97-136 (March) 1930

*Traumatic Brain Edema and Encephalitis. J. J. Keegan, Omaha.—p. 97.
Goiter: Case. A. Brown, Omaha.—p. 101.
Massive Collapse of Lung. R. H. Whitham, Lincoln.—p. 104.
Sinus Problem. H. B. Lemere, Omaha.—p. 106.
Treatment of Varicosity of Lower Extremities by Sclerosing Solutions. A. M. Sonneland, Norfolk.—p. 109.
*Vitamin B and Significance. M. G. Wohl, Philadelphia, and F. Woosley, Omaha.—p. 111.
Proctitis and Relation to Colitis. L. E. Moon, Omaha.—p. 114.
Angina Pectoris. M. L. Wilson, Falls City.—p. 117.
Dermatologic Clinics. A. Schalek, Omaha.—p. 119.

Traumatic Brain Edema and Encephalitis.—Head injuries have increased in recent years, largely as a result of the increased number of automobile accidents. The degree of injury varies from a slight concussion to a severe cerebral wound and involves an interpretation of neurologic signs which may be most significant in the saving of life or in the prevention of disagreeable post-traumatic symptoms. Keegan presents some of these important diagnostic signs, particularly to emphasize traumatic cerebral edema and encephalitis. The greater number of patients with head injury do not develop middle meningeal hemorrhage. In fact, its incidence in a large series of cases is surprisingly low, 5 per cent or less. Much more frequent and important is the direct injury to the brain which results in varying degrees of cerebral edema or laceration. The swelling of the brain may be either local or general and may give rise to alarming pressure symptoms. Likewise the cortical injury may be either local or general and may seriously interfere with brain function. A condition similar to acute brain edema is the development of low grade intracranial pressure symptoms two or three weeks after a head injury. The usual complaint is pain in the eyes, frontal headaches and sometimes dizziness. Measurement of the cerebrospinal fluid pressure at this time often will show a surprising elevation to 20 or 30 mm. of mercury, the normal being under 10 mm. The fluid may have a yellow tinge and increased protein content. The term brain edema would hardly apply to this late condition, since it more properly would be present during the acute stage of the brain injury. It is more likely due to hemorrhage into the cerebrospinal fluid at the time of injury and resultant interference with absorption of cerebrospinal fluid, either as a result of a blocking of the arachnoid filters through which the fluid must pass to enter the venous sinuses or of obliteration of the subarachnoid spaces over the cerebrum from the early brain edema. This late low grade pressure usually is relieved by a few spinal punctures, with fluid drainage each time to normal pressure. If early hemorrhage into the cerebrospinal fluid is the cause of this condition it would seem to be good therapy to drain off this blood earlier, on the second or third day following injury. Although there is some danger in spinal puncture in conditions of intracranial pressure, either from the sudden reduction of pressure or from herniation of the cerebellum into the foramen magnum, Keegan believes less total harm will be done by carefully performed diagnostic and therapeutic spinal punctures in head injuries than by allowing low grade pressure symptoms to continue too long a time without diagnosis and therapeutic spinal drainage. Probably most of the disagreeable chronic post-traumatic headache and dizziness can be prevented by proper early treatment. If not, there is now a method of giving relief in a considerable number of these chronic cases by the intraspinal replacement of cerebrospinal fluid with air. By this method from 50 to 100 cc. of cerebrospinal fluid is withdrawn in 10 cc. amounts, or continuously by special apparatus, and replaced by a slightly less quantity of air. This air passes up into the subarachnoid spaces over the cerebrum and into the ventricles, thus giving excellent diagnostic encephalograms by means of the roentgen ray. The air gives rise to an immediate reaction of headache and vomiting but gives complete relief from the chronic headache and dizziness in from 60 per cent to 70 per cent of the cases. It has no permanent bad effects.

Vitamin B and Significance.—The present-day American diet has a relative shortage of vitamins, especially of vitamin B. Wohl and Woosley made experiments to increase the vitamin content of white wheat flour. White wheat flour containing 0.5 per cent of brewers' yeast appeared to be sufficient to insure constant growth of white rats and to prevent polyneuritis in pigeons.

New England J. of Medicine, Boston

202: 255-310 (Feb. 6) 1930

Primary Adenocarcinoma of Jejunum: Two Cases. F. C. Newton and R. C. Buckley, Boston.—p. 255.
*Pneumonia in Relation to Epidemic of Mild Influenza. A. M. Burgess and C. F. Gormly, Providence, R. I.—p. 261.
*Treatment of Neurosis (Cardiac). W. D. Reid, Boston.—p. 264.
Intestinal Diverticulosis, Pernicious Anemia, Bilateral Suprarenal Apoplexy: Case. G. W. Taylor, Boston.—p. 269.
*Injection Treatment in Varicose Ulcers. W. A. White, Jr., Boston.—p. 271.
Diagnostic Problem. E. J. Ottenheimer, Willimantic, Conn.—p. 274.
Ephraim McDowell, the Surgeon. E. C. Cutler, Cleveland.—p. 276.
Recent Progress in Physiology. P. G. Stiles, Boston.—p. 279.
Present Status of Medical Economics. H. S. Baketel, Jersey City, N. J.—p. 282.

Pneumonia in Relation to Epidemic of Mild Influenza.—The view that postinfluenzal pneumonia is due to lowered resistance brought about by the influenza and to secondary invasion by any virulent organism that may gain a foothold in the tissues of the respiratory tract, rather than to the virus of influenza itself, Burgess and Gormly assert is supported by the occurrence of many typical cases of lobar pneumonias following influenza, by the infection of several members of influenza-stricken families with the same type of pneumonic infection and by the occurrence of a few fulminating cases like those seen in the pandemic of 1918 associated with the presence of a particular organism, *Staphylococcus pyogenes-aureus*. It seems reasonable to suppose that in epidemics like that of 1918 the influenza virus produces a greater loss of resistance and therefore a greater tendency to the production of pneumonia of the fulminating type. The difference between that epidemic and the subsequent "mild" outbreaks seems to be entirely one of degree of virulence rather than of kind of infection.

Treatment of Neurosis (Cardiac).—Reid feels that the medical student rarely acquires an adequate conception of cardiac neurosis. The physician must prepare himself by reading sufficient literature on the psychoneurosis and by purposely studying man and his reactions to his environment and life experiences. The treatment of neurosis (cardiac) is essentially the same as that of any psychoneurosis. The principles are summarized under four points: (1) suggestion; (2) persuasion; (3) analysis, and (4) reeducation. Cardiac neurosis can and should be effectively treated by the general physician.

Injection Treatment in Varicose Ulcers.—White says that he has tried most of the popular sclerosing solutions but

has obtained the best and most constant results with Genevrier's mixture of quinine hydrochloride and urethane; quinine hydrochloride, 4 Gm.; urethane, 2 Gm., and distilled water, 30 cc. His second choice is a 20 per cent solution of sodium chloride. This he uses in the rare cases in which there is an intolerance to quinine, and during pregnancy and catamenia.

202: 357-404 (Feb. 20) 1930

Clinical Aspects of Pyelonephritis in Pregnancy. E. G. Crabtree and G. C. Prather, Boston.—p. 357.
*Pyelitis in Puerperium. G. C. Prather and E. G. Crabtree, Boston.—p. 366.
*Obstetric Management of Cases of Urinary Infections in Pregnancy. F. S. Newell, Boston.—p. 371.
Identification and Significance of Hemolytic Streptococci in Milk. J. G. Hardenbergh, Plainsboro, N. J.—p. 373.
Indications for Simple Mastoid Operation. M. A. Dechter, Westfield, Mass.—p. 376.
*Simple Maneuver for Removing a T Drainage Tube from Common Bile Duct. A. J. Douglas, Westfield, Mass.—p. 380.

Pyelitis in Puerperium.—Prather and Crabtree urge that postpartum pyelitis should be recognized as a possible cause of puerperal fever. Forty-eight per cent of the cases occur in primiparas. The most logical etiologic factors are: (1) trauma at delivery; (2) postpartum bladder complications; (3) flare-up of a latent pyelitis. Local symptoms may be absent, even though the pyelitis is responsible for the temperature. Costovertebral tenderness and pus in a catheter specimen are the most reliable clinical signs in favor of the diagnosis. Cystoscopy is sometimes necessary to establish the diagnosis. Conservative treatment is advised with forced fluids as the most important item. Cystoscopic treatment is advised if the temperature remains elevated more than eight days. The average period before recovery (sterile urine) is about four months.

Obstetric Management of Urinary Infection in Pregnancy.—Newell believes that abdominal surgery in a severely toxic patient, who may or may not be suffering from bacteriemia, is too dangerous to be advocated unless other indications are present. The immediate prognosis of any conservative operation in these cases should be good unless the patient is practically moribund when the operation is undertaken and such neglect as this implies should not occur, although the majority of the really sick patients must be classed as neglected. The ultimate prognosis will depend on the harm done to the kidney. After delivery the ultimate prognosis should be good, although in a few instances the injured kidney may have to be removed to complete the cure.

Simple Maneuver for Removing a T Drainage Tube from Common Bile Duct.—Douglas removes a rubber T drainage tube from the common bile duct by using a Mayo vein stripper. The protruding portion of the tube is slipped through the ring as one would do with a varicose vein. The instrument is pushed along the tube, while the protruding portion is held till the ring comes gradually to rest against the common bile duct and the transverse part of the tube. While the instrument is held firmly without crowding it, traction is made on the protruding portion of the tube and the arms of the transverse part come to lie parallel with each other within the grasp of the ring of the vein stripper. Tube and instrument may then be removed easily and painlessly with a minimum amount of trauma to the tissues.

New York State J. of Medicine, New York

30: 191-254 (Feb. 15) 1930

Factors That Influence Prognosis and End-Results in Uterine Cancer. W. P. Healy, New York.—p. 191.
Interpretation of Blood Pressure Readings. A. A. Jones, Buffalo.—p. 194.
Relation of Colds to Pneumonia. J. W. W. Dimon, Utica.—p. 197.
Minor Points in Major Surgery. G. W. Cottis, Jamestown.—p. 199.
Surgery of Diabetic Patient. C. G. Heyd, New York.—p. 203.
Traumatic Neurosis from Industrial Point of View. B. J. Slater, Rochester.—p. 205.
*Prevention and Treatment of Pneumonia. R. L. Cecil, New York.—p. 210.
*Simple Method of Tubal Sterilization. E. Bishop and W. F. Nelms, New York.—p. 214.

Prevention and Treatment of Pneumonia.—Cecil states that in a series of 153 cases of type I pneumonia treated with refined serum, the death rate was 20.9 per cent, while the control series of 147 untreated cases showed a death rate of 32.6 per cent. A definite but less marked effect was observed in cases of pneumococcus type II pneumonia that were treated with concentrated serum. The serum had no favorable effect on pneumococcus type III pneumonia. In type IV pneumonia, the death rate was lower in the treated than in the untreated series, but factors other than serum may have been responsible.

Simple Method of Tubal Sterilization.—Bishop and Nelms discuss the method first advocated by the late Ralph Pomroy. Its simplicity lies in the fact that it consists of nothing more nor less than that a loop in the loose, middle portion of the tube is ligated with absorbable suture material and resected. If desired, the cut ends may be cauterized by heat or a chemical. The authors do not crush the tube. They have done this operation about sixty times, there being no record of a pregnancy. In a dozen guinea-pigs and cats, they also have found no pregnancies.

30: 255-312 (March 1) 1930

Cancer as World Problem. J. C. Bloodgood, Baltimore.—p. 255.
Basal Metabolism in Dermatologic Conditions. B. Throne, New York.—p. 259.
Importance of Extrasystolic Arrhythmias in Young Adults. L. F. Bishop and L. F. Bishop, Jr., New York.—p. 266.
Cancer: Nature, Prevention and Treatment. F. E. Adair, New York.—p. 270.
Health Administration of Panama Canal Zone. B. R. Wakeman, Hornell.—p. 274.

Occupational Therapy & Rehabilitation, Baltimore

9: 1-62 (Feb.) 1930

Occupational Therapy in Military General Hospital. H. D. Offutt.—p. 1.
Industrial Workshop of Rochester, N. Y. E. K. Wise, Rochester, N. Y.—p. 11.
How Occupational Therapist Can Help Employer. E. H. Roberts, Los Angeles.—p. 21.
Music, Physical Exercise and Recreation in Mental Diseases. A. H. Meese, Little Falls, N. J.—p. 27.
Teaching Program in Mental Hospital. O. Caldwell, Worcester, Mass.—p. 33.
Curative Occupational Therapy as Conducted by Junior League of Indianapolis in Indiana University Hospitals. J. H. MacDonald, Indianapolis.—p. 39.

Pennsylvania M. Journal, Harrisburg

33: 283-364 (Feb.) 1930

Prevention of Uterine Cancer. P. B. Bland, Philadelphia.—p. 283.
Early Diagnosis of Carcinoma of Uterus. C. C. Norris, Philadelphia.—p. 287.
Shall Cancer of Uterus Be Treated by Surgery or Radiation? G. E. Pfahler, Philadelphia.—p. 291.
Skin in Tuberculosis. F. C. Knowles and J. B. Ludy, Philadelphia.—p. 295.
Clinical and Necropsy Study of 165 New-Born Infants. R. M. Tyson, Philadelphia.—p. 298.
Postmortem Pathology of New-Born. F. W. Konzelmann, Philadelphia.—p. 301.
Spontaneous Pneumothorax. W. T. Sharpless, West Chester.—p. 307.
Major Hazard in Diagnosis of Pneumonia. D. R. Bowen, Philadelphia.—p. 310.
Friedländer's Pneumonia. K. Kornblum, Philadelphia.—p. 312.

Philippine J. of Science, Manila

41: 103-229 (Feb.) 1930. Partial Index

*Transmission of Dengue Fever by Aedes Albopictus Skuse. J. S. Simmons, J. H. St. John and F. H. K. Reynolds.—p. 215.

Transmission of Dengue Fever by Aedes Albopictus Skuse.—Recent collections of larvae indicate that *Aedes albopictus*, like *A. aegypti*, is a common mosquito in Manila. Female *A. albopictus* bred in the laboratory by Simmons et al. were shown experimentally to be effective transmitters of dengue from man to man. Seven human volunteers, bitten by *A. albopictus* which had been infected between thirteen and twenty-two days previously, all developed dengue fever. Hence it is felt that *Aedes albopictus* must be considered an agent in the dissemination of dengue.

Public Health Reports, Washington, D. C.

45: 321-359 (Feb. 14) 1930

Sickness Among Industrial Employees in Second and Third Quarters of 1929. D. K. Brundage.—p. 321.
History Taking in Early Diagnosis of Pulmonary Tuberculosis. G. H. Faget.—p. 323.

45: 439-479 (Feb. 28) 1930

Tularemia Contracted from Coyote (Canis Lestes) in New Mexico: Case. G. M. Kunkel.—p. 439.

Weil-Felix Reaction in Endemic Typhus Fever in Rocky Mountain Spotted Fever. R. R. Spencer and K. F. Maxcy.—p. 440.

Rhode Island M. Journal, Providence

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Streptococcus Hemolyticus Pneumonia: A Disease Entity. E. A. Sharp, Providence.—p. 23.

Southwestern Medicine, Phoenix, Ariz.

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Management of Patients with Goiter. W. E. Sistrunk, Rochester, Minn.—p. 45.

Factors in Infectious Inflammation of Eye. E. R. Lewis, Los Angeles.—p. 48.

Neglected Perforated Appendix. W. Senger, Pueblo, Colo.—p. 53.

Endocervicitis. W. P. McCrossin, Jr., Colorado Springs, Colo.—p. 56.

Tumors in Chest. R. B. Homan, El Paso, Texas.—p. 60.

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Chronic Endocervicitis. W. M. Lancaster, Clovis, N. M.—p. 66.

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Surgery, Gynecology & Obstetrics, Chicago

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*Mechanism of Obstructive Pulmonary Atelectasis. C. M. Van Allen and W. E. Adams, Chicago.—p. 385.

Hemangioma of Tendon and Tendon Sheath: Six Cases. M. S. Burman, New York, and J. E. Milgram, Iowa City.—p. 397.

*Mixed Tumors of Tongue and Sublingual Gland. A. Brunschwig, Chicago.—p. 407.

Anatomic Consideration of Ulcer Bearing Area. M. Einhorn, New York.—p. 416.

*Periarterial Sympathectomy in Circulatory Disorders of Extremities. B. M. Bernheim, Baltimore.—p. 426.

*Sedimentation Test in Pregnancy and Puerperium. P. B. Bland, L. Goldstein and A. First, Philadelphia.—p. 429.

*Effect of Serum from Pregnant Women on Estrual Cycle of Guinea-Pig. G. L. Kelly and L. Florence, Augusta, Ga.—p. 435.

*Fundamental Operative Treatment of Inguinal Hernia. W. W. MacGregor, Detroit.—p. 438.

Value of Indwelling Ureteral Catheters in Urinary Surgery. R. Gutierrez, New York.—p. 441.

Abdominal Technic: System of Operative Exposures. H. B. Devine, Melbourne, Australia.—p. 455.

*Arthrodesis of Shoulder by Means of Osteoperiosteal Grafts. J. A. Key, St. Louis.—p. 468.

Heminephrectomy or Resection of Part of Kidney: Four Cases. W. Walters, Rochester, Minn.—p. 473.

*Use of Ultraviolet Light in Preparation of Infected Granulation Tissue for Skin Grafting: Value of Thick Thiersch Grafts. W. D. Gatch and H. M. Trusler, Indianapolis.—p. 478.

Chronic Recurring Temporomaxillary Subluxation. J. H. Morris, New York.—p. 483.

Postradiation Pregnancy: Case. I. I. Kaplan, New York.—p. 492.

*Premedication for Local Anesthesia with Intravenous Barbituric Compounds. G. de Takáts, Chicago.—p. 494.

Anthropology of Negro Bearing on Mortality in Head Injuries. J. C. Weaver, Atlanta, Ga.—p. 499.

Mechanism of Obstructive Pulmonary Atelectasis.—Van Allen and Adams summarize their experimental study as follows: 1. Quiet or suppressed respiration with bronchial obstruction does not lead to pulmonary atelectasis in the normal lung. 2. Straining respiration is essential to the production of obstructive pulmonary atelectasis in the normal lung. 3. Valvular obstruction produces atelectasis much more rapidly than does total obstruction, but there is no evidence that valvular obstruction occurs spontaneously in man. 4. Pent up bronchial air is probably lost from the lung by blood stream absorption. 5. Obstructive atelectasis develops centrifugally through the lung parenchyma. 6. Decreased intrapleural and intrabronchial pressures occur characteristically in obstructive pulmonary atelectasis.

Mixed Tumors of Tongue and Sublingual Gland.—A case of mixed tumor of the cylindroma type of the sublingual gland is reported by Brunschwig. This neoplasm was present for nineteen years. Apparently benign at first, it finally became malignant, causing extensive local destruction and producing metastases in the lungs and pleura. A case of slowly growing malignant mixed tumor of the tongue of several years' duration, with metastases to the regional lymph nodes, is also reported. Combined surgical (excision) and radium therapy appears to have eradicated the process.

Periarterial Sympathectomy in Circulatory Disorders of Extremities.—Among twenty-eight operations done by Bernheim there were eleven successes and seventeen failures. Three deaths are included, one each from hemiplegia two days after second sympathectomy, surgical infection and cardiorenal causes after amputation. In view of the fact that the operation is not especially dangerous, that it can be done under local as well as under general anesthesia, that hospitalization of hardly more than a week is required, that there is little or no discomfort following it, that it is usually well borne even by patients over 60 years of age, and that in certain cases the result is actually brilliant, Bernheim believes it would seem fair to conclude that in selected cases of circulatory disorders of the extremities, periarterial sympathectomy really has much to offer.

Sedimentation Test in Pregnancy and Puerperium.—The blood sedimentation test was performed by Bland et al. on 540 gravid women in different periods of pregnancy and in the puerperium. In 536 patients, sedimentation occurred more rapidly than in the normal nonpregnant patient. Of the 453 women examined in the sixth month of pregnancy or later, 75 per cent showed a marked acceleration of sedimentation, equal to either a diagonal or a vertical curve. Of seventy-nine patients with an erythrocyte count of 4,000,000 or more, twenty-four (30 per cent) gave either a diagonal or a vertical curve; whereas of the eighty-six patients with a severe anemia (counts below 3,000,00), seventy-nine (91 per cent) had a sedimentation velocity equivalent to either a diagonal or a vertical curve. Of the twenty-six patients having a high leukocyte count (15,000 or over), twenty-four (92 per cent) showed a rapid acceleration, whereas 64 per cent of the 394 patients having a leukocyte count below 10,000 gave a sedimentation rate equivalent to a diagonal or a vertical curve. The same sedimentation rates as occurred during pregnancy were maintained during the first ten days after delivery. The sedimentation reaction and the erythrocyte counts returned to the normal of the nonpregnant woman in practically all the women examined within six months after delivery. Of the 100 women examined within six months after labor, ninety-two exhibited a slow sedimentation, with an index of from 6 to 8 mm.

Effect of Serum from Pregnant Women on Estrual Cycle of Guinea-Pig.—On the premise that during pregnancy there is an excess of corpus luteum hormone over the estrus-producing hormone and on the basis of the knowledge that the corpus luteum hormone inhibits estrus, Kelly and Florence undertook to ascertain whether injections of serum from women known to be pregnant would inhibit estrus in the guinea-pig. Only animals that were healthy and regular were used. They were divided into three groups, the first to be used as test animals and the second and third as controls. The second group received injections of serum from nonpregnant women and the third group injections of a 1 per cent peptone solution. The results in the first group showed a delay in the onset of estrus, the postponement, varying from three to eight days, with an average of six days. In the second group, serum from nonpregnant women was injected, each one receiving a total of from 12 cc. to 20 cc. over a period of four days in increasing dosage. In this group the onset of estrus was postponed from 0 to two days, the average being 0.8 day. In the third group each received a total of 20 cc. of 1 per cent peptone solution in four days. In none of the members of this group was there any delay in the onset of estrus. The authors have not as yet made any effort to ascertain whether the effects vary if the serum is obtained from women in early, middle or late pregnancy.

Fundamental Operative Treatment of Inguinal Hernia.—MacGregor has devised certain modifications of technic in inguinal herniotomy that have been productive of entirely satisfactory results. After the usual Bassini incision, a grooved director is inserted between the pillars of the external ring, and the aponeurosis of the external oblique is split in the direction of the internal os. If the operator intends subsequently to employ an Andrews closure, it is best that this splitting be done above the line of the cord, so that a sufficient inferior aponeurotic flap be left for imbrication. Retraction now reveals the full extent of the canal. The sac is separated, emptied, ligated and excised in the orthodox manner. The internal

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inguinal sphincter is identified and its relative insufficiency determined. Any defect is then corrected by displacing the cord to the upper inner quadrant of the ring, and so shortening and suturing (number 1 chromic catgut) the lower outer fibers of the sphincter as best to restore the snugness and tonicity of the muscular ring. It is essential to note that these sutures in no way involve the shelving edge of Poupart's ligament but serve only to bring together the deficient lower outer portion of the inguinal sphincter. It is also essential that throughout all of the manipulations no injury be done to the ilio-inguinal or iliohypogastric nerves, since traumatization of their motor fibers may defeat the purpose of the entire operation by producing degenerative paresis of the internal inguinal sphincter. The manner of subsequent closure of the canal and of the incision may be left to the choice of the operator. In most instances, the anterior or posterior Wyllys Andrews closure, as employed by MacGregor, will be found entirely satisfactory.

Arthrodesis of Shoulder by Means of Osteoperiosteal Grafts.—Key denudes the head of the humerus and the glenoid completely of cartilage and diseased bone. The periosteum is removed from the deep surface of the detached tip of the acromion in order that it may be approximated to the denuded upper surface of the humerus. With a small drill, a hole is made through this fragment and through the base of the acromion at a point opposite for the placing of the suture to hold the fragment in place. The osteoperiosteal grafts removed from the tibia are cut in lengths of about 2 inches and are inserted as thickly as possible around the borders of the glenoid beneath the elevated periosteum of the scapula, with their free ends sticking out like the fingers of a half closed hand to receive the denuded head of the humerus. The deep or bone surface of the grafts faces inward to make contact with the denuded upper end of the humerus. The humerus is then placed against the glenoid and, in tuberculous patients, a small stab incision is made in the skin of the outer surface of the upper arm at a point about 3 inches below the upper end of the humerus. With the humerus held against the denuded glenoid and in the desired functional position, a large nail is introduced through the stab incision and driven through the upper end of the humerus in such a manner that its point enters the glenoid as near its center as possible. The arm meanwhile is held in a position of abduction of about 90 degrees and anterior flexion of about 25 degrees. The acromion is sutured to the clavicle by means of chromic catgut, and another piece of chromic catgut is passed through the holes in its tip and in the base of the acromion and tied tightly, thus permitting the acromion to collapse on the denuded lateral surface of the upper end of the humerus. Interrupted subcutaneous sutures of plain catgut are used to close the wound and continuous silk suture to close the skin. No drainage is used.

Use of Ultraviolet Rays in Preparation of Infected Granulation for Skin Grafting.—By the methods Gatch and Trusler have employed, Thiersch grafts cut to proper thickness and successfully transplanted give a better result than whole skin grafts. They state that the factors which render granulation tissue unsuited for grafting are cicatrix formation and infection. Exposure to ultraviolet rays is a valuable adjunct in the preparation of granulations. The surface must be beefy red, vascular and free from exudates. Excellent results may be obtained by dressing the grafts under pressure with dry gauze wool and an elastic bandage. For the grafting of small areas which will be subjected to trauma and for flexor folds about joints, thick Thiersch grafts are employed. Joints should be splinted in full extension until all tendency to cicatrization has ceased.

Premedication for Local Anesthesia with Intravenous Barbituric Compounds.—An attempt to produce, in patients operated on under local anesthesia, a state of somnolence or light sleep by means of intravenous, subcutaneous and oral doses of hypnotics of the barbituric acid series is described by de Takáts. Because of great individual variations, this attempt was not successful and was given up after trial in thirty-five cases. It is possible that larger doses and other derivatives may give a more uniform effect. The protective action of the barbituric compounds against poisoning with cocaine and its derivatives is pointed out.

Texas State J. of Medicine, Fort Worth

25: 639-712 (Feb.) 1930

Cranial Injuries. W. B. Thorning, Houston.—p. 646.
Use of Local Anesthesia in Major Surgery. L. W. Pollok, Temple.—p. 652.
Clandestine Prostitute. D. C. DeWalt, Houston.—p. 656.
Developmental Anomalies of Face and Neck and Surgical Significance. A. O. Singleton, Galveston.—p. 659.
Gonorrhea in Female from Public Health Viewpoint. M. Orman, Houston.—p. 663.
Status of Clinical Pathology. W. F. Thomson, Beaumont.—p. 666.
Cholecystography. R. T. Wilson, Temple.—p. 668.
*Amiodoxyl Benzoate in Treatment of Arthritis. D. Neighbors, Fort Worth.—p. 672.
Cause and Prevention of Puerperal Fever. B. H. Passmore, San Antonio.—p. 674.
Toxic Facial Paralysis. A. F. Clark, San Antonio.—p. 677.
Maxillary Sinus as Site of Focal Infection. E. F. Stroud, Corpus Christi.—p. 680.
Nursing Mother. W. H. Hargis, San Antonio.—p. 684.

Amiodoxyl Benzoate in Treatment of Arthritis.—Neighbors reports fourteen cases which he treated with amiodoxyl benzoate. The drug was given intravenously in doses of 1 Gm. dissolved in 100 cc. of physiologic solution of sodium chloride. Two treatments were given a week. Most of the patients were ambulatory and remained at the clinic from one to three hours after treatment before returning to their homes. The solution was administered by gravity, not less than ten minutes being used for the injection. Eight patients have experienced marked symptomatic relief to the extent that they are free from pain, and the tenderness, swelling and muscle spasm of the involved joints have been much improved. Two report moderate improvement, two slight improvement and two no improvement whatever. Two hundred and fifty cases recorded in the literature are summarized. One hundred and thirty-nine showed marked improvement, thirty-nine moderate improvement, thirty-eight slight improvement and thirty-four no improvement. The chronic type of arthritis gave the best results. Of 167 cases, seventy-six showed marked improvement. Only thirty patients were not benefited at all.

United States Vet. Bur. M. Bull., Washington, D. C.

6: 87-175 (Feb.) 1930

Unnecessary Prolongation of Hospitalization: Chronic Arthritis, Osteoarthritis, and Neuritis. J. R. McDill.—p. 87.
*Treatment of General Paralysis. G. H. Ingram.—p. 94.
Management of Patients Undergoing Treatment by Inoculation with Malarial Blood. I. Kimbell.—p. 98.
Relation of Lymphatic System to Tuberculosis. H. A. Callis.—p. 102.
*Intestinal Tuberculosis. L. B. Kline.—p. 107.
*Roentgenologic Diagnosis of Intestinal Tuberculosis. H. B. Williams.—p. 113.
Fistula of Ischiorectal Region. C. J. Howard.—p. 118.
*Ketogenic Diet Treatment of Epilepsy. R. C. Henderson.—p. 122.
Treatment of Chronic Ulcer of Leg: Formula for Modified Unna's Paste. E. K. Allis.—p. 130.
*Injection Treatment of Prolapsus Ani. H. D. Coffee.—p. 132.
Sporotrichosis. H. O. Barker and G. A. Nieweg.—p. 135.
Full Dentures. W. J. Baker.—p. 137.
Method of Preparing Roster for Officer of Day. L. G. Beardsley.—p. 141.
Acute Myeloid Leukemia. M. M. Barship and L. C. Elledge.—p. 144.
Narcoleptic Syndrome. C. B. Partington.—p. 148.
Ulcerating Granuloma of Pudenda. F. C. Walsh.—p. 151.
Contacting a Claimant with Active Tuberculosis. M. Berwick.—p. 154.
Technic of Static Therapy. E. Merkel.—p. 157.
Improvised Dye Vat for Textiles, Reed and Raffia. J. G. Rea.—p. 162.

Treatment of Dementia Paralytica.—Of 100 patients treated by Ingram with tryparsamide and malaria, thirty-eight are greatly improved and have been discharged from the hospital, and according to recent reports are living at home and contributing to the support of their families; thirty-five are improved but remain in the hospital and are performing satisfactory occupational therapy under supervision; nineteen are unimproved, and eight have died—two of cerebral hemorrhage; four of general debility; one of acute pancreatic necrosis, and one of pneumonia. He urges that all patients receiving malaria should be given digalen during the entire course of infection and such other symptomatic treatment as is necessary to keep the patients reasonably quiet and comfortable. The results secured are sufficiently encouraging to warrant continuing the treatment of patients with dementia paralytica by tryparsamide and fever therapy as carried out by inoculation with tertian malaria.

Intestinal Tuberculosis.—Kline has made a study of 1,078 cases of pulmonary tuberculosis complicated in 233 instances by intestinal tuberculosis. The 233 cases are studied as a whole and are further analyzed by subgrouping seventy-five cases which came to necropsy and the remaining 158 patients who were cured, improved, unimproved or died. In the necropsy group it was found that in no instance was the clinical or the roentgen diagnosis of intestinal tuberculosis contradicted. Many cases were found positive at necropsy in which no clinical diagnosis had been made. In the series of 233 patients, 8.15 per cent were cured and an average of 157 days elapsed following the time when the status as defined by a "cure" had been reached; 35.6 per cent were improved; 14.5 per cent were unimproved; 1.2 per cent became worse, and 40.3 per cent died. A table of symptoms is given showing their relative frequency. Colicky pain was present in 136 cases; gas formation in 126 cases and anorexia in eighty cases. These were the three outstanding symptoms. Next came diarrhea, seventy-one cases; localized tenderness, sixty-six cases, and loss of weight, sixty-five cases. In comparing the distribution of lesions as found at necropsy with those determined by the roentgen ray and by clinical study, it would appear that the latter methods locate more lesions in the cecum and ascending colon than are justified and that the necropsy reveals lesions in the small bowel which leave present diagnostic methods far behind. Information gained from stool examinations is usually of the negative type.

Roentgenologic Diagnosis of Intestinal Tuberculosis.—In thirty-three of the forty-six cases discussed by Williams there was complete agreement between the roentgen ray and postmortem observations; in three others there was virtual agreement, as no ulceration was present in the proximal colon but was present in the ileum and was recent in all three cases; in eight other cases there was recent ulceration in the cecum, but a considerable period had elapsed between the last examination and death, during which time these patients were too ill to undergo further examination, and it is probable that ulceration began during this period. In only two cases was ulceration moderately or far advanced. In these cases the intervals were thirteen and fifteen months between examination and death. Wherever discrepancies between roentgen ray and necropsy observations exist, no positive roentgenographic diagnosis has been reversed by subsequent necropsy observations. Conversely, negative roentgen diagnoses have always been confirmed except in instances in which the period elapsing between the last examination and the time of necropsy has been sufficient for the development of tuberculous ulceration.

Ketogenic Diet Treatment of Epilepsy.—Although the exact place of the ketogenic diet in the treatment of epilepsy, as well as an explanation of its therapeutic mechanism, remains as yet to be determined, it is Henderson's conviction that this form of treatment does have a place in the treatment of epilepsy. Although the frequency of the convulsive attacks was not, in some cases, greatly changed, the attacks were usually of shorter duration and less severe. The mental demeanor of his patients was in most cases improved. They seemed more alert, cheerful, of brighter countenance, and definitely less irritable. No medication was given during the treatment (except in a few cases bitter extract of cascara to correct constipation). Several patients expressed gratification at not having to continue the use of drugs. Until ketosis was established there was some loss in body weight. After ketosis was established the weights remained fairly constant.

Injection Treatment of Prolapsus Ani.—Coffee has used 95 per cent alcohol with good result. The needle, which must be at least 2 inches in length, is introduced through the skin one-half inch distal to the anal orifice and, guided by the tip of the index finger in the rectum, is pushed 1 inch internal to the sphincter between the rectum and the perirectal tissue, and approximately 10 cc. of the 95 per cent alcohol is then injected around the rectal pouch. The needle is introduced only twice, once on each side of the anal orifice. A pyramidal compress over the anus is held in place by a T binder. The bowels are moved on the third day by an oil enema. The patient is kept in bed one week, and, during defecation, on his back with the hips raised. Four cases are reported, in three of which cure apparently resulted and in one improvement.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Actinotherapy & Physiotherapy, London

4: 235-256 (Feb.) 1930

*Diathermy in Pneumonia. H. E. Stewart.—p. 238.
Ultraviolet Radiation Obtainable from Tungsten Filament Lamps. F. Dannmeyer and H. D. Griffith.—p. 240.
Irradiation Therapy in General Hospital. E. Hunt.—p. 242.
Medical Review of British Spas: VII. Cheltenham Spa. M. B. Ray.—p. 246.
Curative Properties of Czechoslovak Spas. V. Mladejovsky.—p. 248.
Uses of Ultraviolet Ray Therapy. C. Nicory.—p. 250.

Diathermy in Pneumonia.—Stewart asserts that most cases of pneumonia when treated by diathermy show marked improvement in the respiration, pulse rate and character, cyanosis and general feeling of the patient. The drop in temperature by lysis which occurs in more than 96 per cent of all treated cases seems to indicate clearly that diathermy modifies the usual course of this disease. No other measure, medicinal or otherwise, indicated by the patient's condition, need be set aside because of the use of diathermy. In the giving of approximately 8,000 treatments for this disease, not a single accident or untoward effect has occurred. It is therefore more safe than many medical and surgical procedures used as a routine. There is considerable evidence at hand that the mortality in pneumonia may be reduced one half or more, particularly when treatment is instituted early.

British Medical Journal, London

1: 269-320 (Feb. 15) 1930

Maternal Mortality. L. McIlroy.—p. 269.
*Preventive Aspect of Obstetrics. G. I. Strachan.—p. 273.
Antenatal, Natal, and Postnatal Problems. W. H. F. Oxley.—p. 275.
*Use of Paraldehyde Before Anesthesia. H. R. Phillips.—p. 279.
Cholecystocolic Fistula with Unusual Radiographic Findings. C. J. Fuller.—p. 279.
Estimation of Protein in Urine and Relation to Casts. F. T. Grey.—p. 280.
*Operative Treatment of Cirrhosis of Liver. T. Tannahill.—p. 281.
Dermatitis Artefacta Due to Cantharides Plaster. F. Gardiner.—p. 282.
General Method for Mallory's Triple Stain. M. A. MacConaill.—p. 282.
Axillary Breast: Two Cases. R. E. Anderson.—p. 283.
Treatment of Hemorrhagic Diseases by Whole Blood. H. Pereira and A. Pereira.—p. 283.

Preventive Aspect of Obstetrics.—Strachan stresses the importance of early and frequent antenatal examinations of pregnant women with an eye to the prevention of preventable complications of pregnancy, but pleads urgently for adequate training to conduct a normal case of labor and ability to meet the emergencies that arise during labor in spite of the best antenatal care.

Use of Paraldehyde Before Anesthesia.—After using paraldehyde before operations in more than 250 cases of all kinds, Phillips comes to the conclusion that its uses are somewhat limited. Paraldehyde should not be given as a routine before every operation, but only in selected cases. Its great advantage is that, when successful, the patient knows nothing from soon after the introduction of the drug until some hours after the operation. In order that full benefit be obtained the administration of paraldehyde should be commenced one and a half hours before operation. It must be given slowly, and then the patient moved about as little as possible; therefore it is best to place the patient on a trolly either before or soon after the introduction. It is still better to give the solution on the operating table if the patient does not mind the surroundings. Induction by general anesthetics is certainly smoother, and a smaller quantity is required; special care must be taken to be sure that the airway is free. It is not easy to be certain when anesthesia is sufficiently advanced to allow the surgeon to commence his work. Complete relaxation is more difficult to obtain for abdominal work, as one is apt to be misled by the quiet and rather shallow breathing. In brain surgery and profoundly toxic subjects, paraldehyde is contraindicated. The after-effects in adults vary considerably, but among patients who have paraldehyde there is a higher percentage who vomit than among those who do not have it. The vomiting, while it lasts, is severe, but as a rule does not

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continue for long. A feeling of general misery for some days is not an uncommon phenomenon after the use of the drug, and occasionally patients are actually mentally unbalanced for the time being. After the patient returns to bed just as much care must be exercised in keeping the airway free as during the operation, so that until the patient is showing signs of recovering his reflex he must be constantly under supervision. There are many advantages in the use of paraldehyde, particularly for nervous people and for those who have a strong objection to the smell of ether, or who have a dread of losing consciousness. In a satisfactory case the patient knows nothing of having an operation, and for many hours time is blotted out. In thyroid cases especially its use appears to be suitable, and in these a minimum of general anesthetic is required. Tonsillectomy lends itself to a successful exhibition of the drug, because, if the patient is amenable, the first few hours of great pain and discomfort are passed over before a return to consciousness. Still, even in these cases its use is not without risk, as it is easy to overlook oozing owing to the comatose state of the patient. In orthopedic work the advantages are similar, except that it may not be wise to use it when the operation is in the region of the hip, pelvis or upper part of thigh, since some patients, especially young ones, occasionally evacuate some of the fluid. Certain individuals have an idiosyncrasy toward paraldehyde.

Operative Treatment of Cirrhosis of Liver.—Tannahill reports a case in which the following procedure was employed: The abdomen was entered through the rectus muscle. The great omentum was drawn upward and sutured into an opening in the upper part of the posterior sheath of the left rectus muscle (epiplopexy), the object of this being twofold: first, to establish a collateral circulation or by-pass between the portal and systemic venous systems and so relieve the portal obstruction, and second, to keep the omentum from interfering with the second procedure adopted. The second procedure was carried out in order to cause absorption of the ascitic fluid by the lymphatic and circulatory systems. This was done by insertion of two Paterson buttons, one on each side of the incision. These buttons are made of smooth glass; in shape they are like collar-studs, but with the two disks equal in size, and with the stem hollow. One stud was inserted so that it made a communication between the abdominal cavity and the space underneath the anterior sheath of the left rectus; the other, between the abdominal cavity through the right rectus into the subcutaneous tissues. The studs were inserted at the level of the lower end of the incision and about 2 inches to each side of it, in order to keep them as far away from the omentum as possible. The wound was then sutured in layers. The after-results have been surprisingly good. From the date of the operation the patient has not ceased to improve.

Glasgow Medical Journal

32: 57-112 (Feb.) 1930

Diagnosis and Infectivity of Influenza. J. Ferguson.—p. 57.
*Etiology of Influenza. W. G. Liston.—p. 64.
Pneumonia in Relation to Influenza. W. M. Elliott.—p. 78.
Clinical Account of Outbreak in Glasgow of Bacillary Dysentery. T. A. Pratt and H. W. O. Frew.—p. 82.
Tabes Dorsalis with Unusual Symptomatology: Case. P. J. Molloy.—p. 84.

Etiology of Influenza.—Liston is of the opinion that Pfeiffer's influenza bacillus is the cause of influenza. He believes that those bacteriologists who have abandoned the view that Pfeiffer's bacillus is the cause of influenza have done so because they have failed to use a suitable culture medium for the isolation of the bacillus, or they have mistaken other organisms which they have found in normal persons for the true influenza bacillus.

Lancet, London

1: 331-386 (Feb. 15) 1930

Massive Collapse of Lung. J. R. Bradford.—p. 331.
*Cholecystitis and Cholelithiasis. A. J. Walton.—p. 334.
*Calcium Metabolism in Acute Stages of Chorea in Children. E. C. Warner.—p. 339.
*Pernicious Type of Anemia Following Erythremia. H. Avery.—p. 342.
*Etiology of Psittacosis. S. P. Bedson, G. T. Western and S. L. Simpson.—p. 345.
Remedial Exercises in Treatment of Pulmonary Diseases. A. H. Douthwaite and H. S. Angove.—p. 346.
*Cardiac Hypertrophy in Infant: Case. J. J. Savage.—p. 348.
Relative Septicity of Dummy Teat and Thumb. E. A. Barton.—p. 348.

Cholecystitis and Cholelithiasis.—Walton points out that increasing knowledge of the pathology of the gallbladder is making it evident that disease of this organ is one of the commonest causes of dyspepsia and ill health. In his own series there have been 574 cases, 451, or 78.5 per cent, among females. The ideal operation in his opinion is a cholecystectomy. In patients who are suffering from an acute or even gangrenous cholecystitis, the general condition may be so bad that the surgeon has to be satisfied with a cholecystostomy, although it is almost certain that a more radical operation may be required at a later date. Whatever operative steps are performed, he is strongly of the opinion that it is always wise to insert a drainage tube down to the cystic duct for a few days; however carefully the stump of the cystic duct is sutured a certain amount of leakage of bile may take place. If the progress is uninterrupted it may be removed in two or three days. He summarizes his views by stating that: (1) cholelithiasis is, in the majority of cases, dependent on inflammation of the gallbladder; (2) this inflammation is due to a blood-borne infection; (3) it is at first a part of a general infection or mild septicemia; (4) in the early stages of cholecystitis medical treatment should always be attempted; (5) when once stones have been formed surgical intervention should always be sought; (6) the ideal surgical treatment consists of cholecystectomy, exploration of the common duct, and dilation of the ampulla.

Calcium Metabolism in Acute Stages of Chorea in Children.—Examining the blood in thirty-eight cases of chorea Warner found that there is a rather low value in the total serum calcium, which rises as the chorea subsides. The ultimate value reached is similar to that obtained in control cases of convalescent bone disease, both groups of cases being drawn from the poorer classes of the population. These are lower than the values obtained in six healthy medical students of the age of 17. The calcium content of the cerebrospinal fluid in chorea is consistently low, and at the same time there is a rise in the electrical excitability of the peripheral nerves and muscles as measured at the "motor point." As recovery ensues, corresponding with the rise in the calcium of the cerebrospinal fluid, the electrical excitability diminishes. The author suggests that the presence of this calcium deficiency may help to explain some of the characteristic features of chorea. Chorea is seen during the period of growth, when there is a special need of calcium in all the tissues of the body. After the age of 25, when ossification ceases, chorea is rarely seen except during pregnancy, when again there is a drain on the calcium reserves of the body in order to supply the fetus. It may be that, just as rickets is associated with faulty calcium metabolism at an early age, so is chorea at a later age.

Pernicious Type of Anemia Following Erythremia.—A case is described by Avery in which polycythemia rubra vera of several years' standing passed into an anemia resembling pernicious anemia. Liver treatment resulted in a marked improvement in the blood picture, but the patient died of an intercurrent polyserositis. Marked hematopoiesis was seen in the bone marrow.

Etiology of Psittacosis.—Twelve parrots have been investigated by Bedson et al., but of these only six had been responsible for human psittacosis. Only three of these six parrots have been examined for the presence of a filtrable virus, and in all three evidence of such a virus has been obtained. In each case the filtrate of an organ suspension has produced a fatal disease in budgerigars, and one of these strains has now been carried to the third generation in budgerigars, filtered material being employed throughout.

Cardiac Hypertrophy in Infant.—Savage relates the case of a child, aged 5 weeks, who was in a state of great weakness and with marked cyanosis. The lips were a bright purple, the face had a distinct bluish tinge, the fingers were clubbed, and the hands were dusky. The child had been breast-fed, but was so feeble that it had never been known to cry; its only efforts in that direction were confined to a few abortive gasps, accompanied by a distortion of the mouth and facial muscles. It

was fairly well nourished. On examination the most marked manifestation was the terrific effort made in inspiration. The whole chest heaved and seemed to lift itself bodily from a globular abdomen. The sides of the ribs were indrawn, as were also the axillary spaces, and the intercostal muscles were definitely retracted into troughs and hollows along the chest wall. On percussion a pronounced dulness was marked over the cardiac area and extending well to the right of the sternum, but no thrill or precordial pulsation could be felt, nor was any murmur heard. The child died suddenly. On removal of the chest wall the heart was seen to occupy four fifths of the whole thoracic cavity. The lungs were nowhere to be seen anteriorly. The weight of the heart was 4½ ounces (127 Gm.) and its size was 2¼ inches by 2½ inches. The walls of the right ventricle were twice as massive as those of the left. The pulmonary artery was widely opened. There was no trace of a permanent ductus arteriosus. The ventricles were healthy, as was also the interventricular septum. The only lesion discovered was a small obliquely vertical aperture, 5 mm. by 2 mm., in the fore part of the membranous diaphragm of the fossa ovalis.

Quarterly J. of Medicine, London

1: 135-232 (Jan.) 1930

*Paradoxical Embolism. T. Thompson and W. Evans.—p. 135.
Periosteal Neurofibromatosis: Case. F. P. Weber.—p. 151.
*Continuous Registration of Blood Pressure. F. L. Golla and S. Antonovitch.—p. 167.
*Alkalemia in Diarrhea of Infants. M. Maizels and C. B. McArthur.—p. 171.
*Origin and Occurrence of Lactic Acid in Human Gastric Contents: Malignant and Nonmalignant Conditions. E. C. Dodds and J. D. Robertson.—p. 175.
*Calcium and Phosphorus Metabolism in Chronic Diarrhea with Tetany. G. C. Linder and C. F. Harris.—p. 195.
*Liver Treatment of Anemias. J. M. Vaughan.—p. 213.

Paradoxical Embolism.—When thrombosis in the systemic veins is associated with an embolus in the general systemic circulation, the embolus passes from the right to the left side of the heart through a patent foramen ovale, and the condition is then termed a crossed or paradoxical embolism. Recorded cases are reviewed by Thompson and Evans and five new cases are added to this list. One of the cerebral arteries, and usually the middle cerebral artery or one of its branches, appears to provide the seat for the embolism in the majority of cases. Cerebral embolism was present in each of the authors' five cases; in four of them it occurred on the left side, and in the remaining case on the right side. Paradoxical embolism is seldom confined to the cerebral arteries, and usually the lesion is multiple. In these five cases it occurred in the cerebral and renal arteries in two instances, in the cerebral and splenic arteries in one, and in the cerebral and coronary arteries in one, while the cerebral artery alone appeared to be involved in a patient who survived the embolism. In a series of 13,234 consecutive necropsies they found cerebral embolism present in forty-nine instances. The embolism proved to be of the paradoxical variety in two cases. In order to ascertain the incidence of patent foramen ovale the authors examined the records of 1,100 consecutive necropsies and found the foramen to be patent in 35 per cent. Of the patients in whom the foramen had remained patent to probe (319) eighty-nine were infants under 6 months old; the average age of the remaining 230 was 20 years, while thirty-six of these were 50 years of age or older. In the third group, in which the foramen had remained wide open (sixty-seven cases), thirty-four were infants under 6 months old, but the average age of the remaining thirty-three patients was as high as 30 years, while nine of these were 50 years of age or older. In a great many of these cases the foramen was guarded by a valvular fold. In young infants the nonclosure of the foramen was also associated with the persistence of some other vestige of the fetal circulation, such as patency of the ductus arteriosus and ductus venosus. The diagnosis of the condition during life is difficult. If a patient, the subject of venous thrombosis, develops cerebral embolism, or in rare instances embolism involving an artery to one of the limbs, and if in such a patient there is no clinical evidence of any other cardiovascular disease present, the authors feel that it may be justifiable to assume that the embolism is of the paradoxical type. Should the embolism be preceded by the occurrence of pulmonary infarction, then the diagnosis becomes more certain.

Continuous Registration of Blood Pressure.—Golla and Antonovitch describe one oscillometric method of continuous recording of systolic blood pressure involving a transmitting capsule inflated at a pressure well below the systolic blood pressure. The dorsalis pedis artery is used for making the measurements.

Alkalemia in Diarrhea of Infants.—Cases of diarrhea in infants are described by Maizels and McArthur in which the blood is more alkaline than normal, and in which the osmotic pressure of the plasma is increased; yet the reaction of the urine remains acid. It is thought that this occurrence is due to deficient excretion of base consequent on renal injury.

Origin and Occurrence of Lactic Acid in Human Gastric Contents.—The investigation reported by Dodds and Robertson consisted in giving test meals to seventy-three consecutive patients presenting themselves for fractional test meal examination. The special study lay in an examination of the various specimens for the presence of lactic acid by both qualitative and quantitative tests. An adaptation of Friedemann, Cotonio and Shaffer's quantitative method for the estimation of lactic acid is described, together with a test of the method proving it to be reliable between a range of 0.01 and 0.9 per cent. From the result of their study the authors conclude that the presence of lactic acid cannot be regarded as a diagnostic sign for carcinoma of the stomach. This substance was found to be present in just under half of the nonmalignant cases, and in small quantities in several of the malignant ones. In one case the lactic acid was isolated as a zinc salt, and chemical analysis together with polarimetric observations proved it to be the inactive compound. Inoculation of gruel with small quantities of the resting juice proved that large quantities of lactic acid were produced in as short a time as six hours. From this it was concluded that lactic acid, in this case at least, arose through fermentation. These observations taken as a whole indicate that little hope can be entertained that even the quantitative estimation of lactic acid can ever be of value in the diagnosis of carcinoma of the stomach.

Calcium and Phosphorus Metabolism in Chronic Diarrhea with Tetany.—Clinical and biochemical studies were made by Linder and Harris in three cases of tetany occurring in adults with fatty diarrhea. The immediate cause of the tetany was calcium deficiency. The serum inorganic phosphorus was reduced to a low level, and in two of the patients phosphorus was almost absent from the urine. In one case decalcification of bone and spontaneous fractures occurred. From a consideration of the calcium and phosphorus balance, the soap and total fat excretion, and the response to treatment, it seemed that the cause of the condition was deficiency of vitamin D. The physical effect of the fats in impending calcium absorption may have played a minor part. The action of viosterol in one case resembled that of parathyroid extract in causing a mobilization of calcium and phosphorus from the bones and in increasing their excretion. Treatment by fat restriction and large doses of viosterol was effective. Fat restriction may be essential to adequate absorption of the viosterol, besides being desirable from the standpoint of the general nutrition of these patients. The possibility of causing decalcification by the prolonged administration of calcium chloride or other acid-forming salt is suggested.

Liver Treatment of Anemias.—Vaughan reviews the literature to assess the therapeutic value of liver in all forms of anemia, and to determine what light recent work has thrown on the pathology of such conditions. She summarizes the result of her research as follows: Liver is a certain remedy in those forms of anemia characterized by megaloblastic hyperplasia of the bone marrow: (*a*) pernicious anemia; (*b*) sprue; (*c*) the pernicious anemia of pregnancy. The therapeutic action of liver is seriously inhibited by the presence of sepsis. Liver is of definite value in some cases of anemia secondary to gastric hemorrhage and in the nutritional anemias. Liver appears to be without value in other forms of anemia. The action of liver is dependent on at least two distinct factors: (*a*) its inorganic salt content and (*b*) the complex polypeptide isolated

by Cohn, Minot, Allies and Salter, one or both of which may be effective in varying conditions. Pernicious anemia must be recognized as a deficiency disease. In the absence of some principle present in the liver and kidney, the bone marrow is unable to produce its normal quota of red cells, and anemia therefore ensues. This substance is probably lacking, though from other causes, in sprue and in the anemia of pregnancy. The severe nervous lesions of subacute combined degeneration of the cord may improve considerably long after a normal blood picture has been achieved if treatment is continued. In patients suffering from pernicious anemia sudden improvement in mental outlook and a rapid gain in weight are characteristic and as important a sign of a satisfactory response to liver treatment as a rise in the reticulocyte count. The leukopenia of pernicious anemia is not invariably lost as a result of liver treatment. The claim that an eosinophilia is characteristic of the response to liver appears to be without satisfactory foundation.

China Medical Journal, Shanghai

44: 81-194 (Feb.) 1930

*Typhoid and Paratyphoid Fever at Paotingfu. J. H. Wylie.—p. 81.
Problem of Status Lymphaticus in Connection with Operation on Children Under Fourteen. A. M. Dunlap.—p. 91.
Chronic Maxillary Sinusitis with Suppurative Parotitis Result of Impaction of Third Molar Tooth: Case. S. E. Kao.—p. 95.
Gas Bacillus Infection: Seventeen Cases. W. Fu-En.—p. 97.
Syphilitic Ocular Diseases Among Chinese. H. T. Pi.—p. 118.
Investigations on Effect of Hormones on Sedimentation Velocity of Red Blood Cells. I. Yun.—p. 141.
Acromegaly with Diabetes and Other Complications: Case. H. L. Robinson.—p. 149.
Gunshot Wound of Femur: Case. F. Brewer.—p. 151.
Castor Oil Treatment of Acute Bacillary Dysentery. T. B. Welch.—p. 153.

Typhoid and Paratyphoid Fever at Paotingfu.—Wylie stresses the fact that typhoid is a serious disease among the Chinese. It is often unrecognized and untreated. It is especially frequent between the ages of 10 and 30. Of 176 patients twenty-six died, a mortality of 15 per cent. The three main causes of death were perforation of the intestine, intestinal hemorrhage and toxemia. Two other complications should be mentioned. Forty-six per cent of the patients were students; hence the control of typhoid among the students of China becomes an important problem.

Bulletins et Mém. de la Soc. Nat. de Chirurgie, Paris

55: 1361-1396 (Dec. 21) 1929

Extra-Articular Arthrodesis of Shoulder in Tuberculosis. M. Lance.—p. 1362.
Gelatinous Ascites. Guimbellot.—p. 1362.
Gastropyloroectomy in Treatment of Perforated Ulcers of Stomach and Duodenum. L. Courty.—p. 1365.
Retroperitoneal Cyst Attached to Descending Colon. Aumont.—p. 1368.
*Abscess of Corpus Luteum Opening into Peritoneal Cavity. F. d'Allaines.—p. 1372.
Injury of Hand and Arm Caused by Compressed Air. Coureaud.—p. 1374.
Traumatic Injuries of Symphysis Pubis. H. L. Rocher.—p. 1377.
Solitary Tumor of Liver. A. Chalier and J. F. Martin.—p. 1385.
Intestinal Obstruction Due to Meckel's Diverticulum. Autefage.—p. 1390.
Epithelioma of Face: Radium Therapy: Recurrent Growth Removed by Surgical Diathermy Ten Years Later. G. Worms.—p. 1392.
Coincidence of Enlarged Testis and Tumor of Lung. Heitz-Boyer.—p. 1394.
Voluminous Tumor of Left Iliac Mesocolon. A. Basset.—p. 1395.

Abscess of Corpus Luteum Opening into Peritoneal Cavity.—D'Allaines reports this unusual occurrence in a girl, aged 17. Symptoms of acute abdominal pain coincident with vomiting were noted twelve days after the last menstrual period. About one week previously she had had a slight sore throat. Her condition rapidly became worse and laparotomy was done nine hours after the onset of symptoms of peritonitis. The abdominal cavity contained about 250 Gm. of thick dark colored pus which was drained. The appendix was likewise removed but showed a normal aspect. However, the right ovary was greatly enlarged and had an irregular opening from which pus flowed. It was removed and two ligatures were placed. Recovery was delayed by suppuration but was otherwise uncomplicated, and the patient returned home four weeks after the operation. She was reported in good health eight months later. On microscopic examination characteristic corpus luteum cells were seen in the resected ovary. Culture of the pus as well as direct examination revealed the presence of pneumococci. Infection of the peritoneal cavity with the pneumococci contained in the metastatic ovarian abscess had caused the secondary peritonitis.

55: 1397-1447 (Dec. 28) 1929

Traumatic Separation of Symphysis Pubis C. Lenormant.—p. 1397.
*Fracture of Patella with Traumatic Lengthening of Ligament. Villechaise.—p. 1399.
Primary Osteomyelitis of Frontal Bone. J. Murard.—p. 1400.
Lateral Hematocolpos with Pyocolpos Resulting from Double Uterus. Guillemin and J. Longet.—p. 1404.
Typhoid Spine. A. Guillemin and L. Mathieu.—p. 1411.
Volvulus of Small Intestines: Four Cases. J. Guibal.—p. 1417.
Recurring Dislocation of Shoulder. Paitre and Didiée.—p. 1423.
Fracture of Trapezoid Bone. E. Sorrel.—p. 1431.
*Acute Thrombo-Angiitis Obliterans in Young Man. R. Grégoire.—p. 1434.
Diagnosis in Tumors of Brain. De Martel.—p. 1438.

Fracture of Patella with Traumatic Lengthening of Ligament.—Villechaise's patient, aged 58, injured her knee by falling on a rock. It enlarged rapidly and hemarthrosis was noted coincident with complete cessation of function. The tendon was flabby, easily compressed and extremely painful. Operation revealed that the ligament was only stretched without being ruptured and that the patella was fractured. The two fragments were sutured and the ligament was shortened by about 4 cm. (1⅝ inches). Ten days later the patient was able to raise the heel of her foot off the bed and three weeks after the operation she could get up. Complete restoration of function was effected without complications arising.

Acute Thrombo-Angiitis Obliterans in Young Man.—The clinical history of Grégoire's patient, aged 23, was characterized by an acute inflammatory onset coincident with a high temperature. Five days previous to his admission to the clinic he suffered from headache, and two days later he developed severe abdominal pain and diarrhea. However, an agglutination reaction for typhoid remained negative and, except for a slight enlargement of the liver, examination did not show any abnormal condition. Three days later his right foot became painful. It was ischemic and cold with complete absence of pulsation in the femoral artery. His general condition became worse and multiple dark patches appeared on the leg. Another test for typhoid resulted in a slightly positive agglutination reaction. The patient at last consented to an amputation of the leg, which was done at the lower part of the thigh. The muscular blood vessels bled freely and the lumen of the femoral artery was free, though its walls appeared slightly thickened. By the next day the general condition was greatly improved. The temperature rapidly became normal and three weeks later he had regained health and left the hospital.

Paris Médical

1: 33-48 (Jan. 11) 1930

Prevention of Syphilis. L. Fournier.—p. 33.
*Removal of Poisons from Stomach by Gastrostomy. M. Chavigny.—p. 40.
Kidney Secretion in Relation to Pathogenesis of Arterial Hypertension. V. Mandru.—p. 40.
*Tuberculosis: Treatment with Gold Compounds. J. Dumont.—p. 44.
Phlegmon in Orbit: Vaccinotherapy with Antivirus. I. Delorme.—p. 46.

Removal of Poisons from Stomach by Gastrostomy.—Chavigny points out that emptying of the intestinal contents after poisoning is frequently incompletely done. He therefore proposes to facilitate lavage through immediate gastrostomy.

Tuberculosis: Treatment with Gold Compounds.—Dumont considers the effect of gold therapy, especially demonstrable in so-called surgical cases of tuberculosis, in tuberculosis of the serous membranes and in tuberculosis of the skin. The clinical histories of two characteristic cases are reported in which treatment was carried out with subcutaneous and intramuscular injections of a gold preparation. The first patient, aged 32, had developed symptoms of pulmonary tuberculosis consecutive to gassing during the war. The sputum contained tubercle bacilli and the cutireaction was negative. On the left hand a circumscribed verrucose patch was noted. The right hand was covered with multiple lesions. Gold therapy for a period of more than six months (in all twenty-five injections were given) resulted in an almost entire disappearance of the cutaneous lesions and a marked improvement of the pulmonary condition. Outstanding was the positive cutireaction to tuberculin, which demonstrated the state of reactivation of allergy.

The second patient was a man, aged 40, who showed symptoms of progressive asthenia coincident with night sweating. On examination the apexes showed a slight involvement. However, the abdomen was greatly distended and the patient had pain in the umbilical region and a high temperature. The diagnosis of subacute tuberculous peritonitis was evident and confirmed by the negative cutireaction. Within two weeks after the treatment was begun his condition was improved. Except for a slight involvement of the right apex seen on the roentgenogram, he was completely restored three months later. The cutireaction had likewise become positive.

Presse Médicale, Paris

38: 81-96 (Jan. 18) 1930

Relation Between Melancholia, Atony of Gallbladder and Biliary Stasis. M. Chiray and S. Zitzermann.—p. 81.
Flocculation. A. Lumière.—p. 84.
*Guanidine Content of Blood in Conditions Other Than Tetany: Clinical Study. J. Turriès and S. Robert.—p. 85.

Guanidine Content of Blood in Conditions Other Than Tetany.—Turriès and Robert determined the guanidine content of the blood in normal persons and in eighty hospital patients, especially those having convulsive attacks and spastic muscular contractions; likewise those with hepatic or renal insufficiency and those with chronic cardiovascular diseases. Guanidine is especially toxic for the muscles and in experimental poisoning symptoms resembling those of tetany were noted. In spite of their careful research the authors could not come to any definite conclusions. With the present available methods of research no relation between hyperguanidemia and conditions of spastic contraction other than tetany could be found.

Schweizerische medizinische Wochenschrift, Basel

60: 93-116 (Feb. 1) 1930

*Food: Therapeutic and Poisonous Effects. Fanconi.—p. 93.
*Prerequisites for Effective Therapy of Cancer of Oral Cavity. O. Schürch.—p. 96.
Principles of Treatment in Fracture of Superior and Inferior Maxillae. P. Schmuziger.—p. 101.
Suprarenal Hemorrhages: Concurrence of Renal and Suprarenal Hemorrhage in a New-Born Infant. P. Quinche.—p. 104.

Food: Therapeutic and Poisonous Effects.—Fanconi shows what the diet should be in order to effect a normal metabolism. First he discusses the proportions of protein, fat and carbohydrate. Then he shows the great significance of the acid-base equilibrium. Diseases of metabolism are generally due to incorrect diets, and the author shows what form of diets will help to restore the normal conditions. Foods influence not only the gastro-intestinal tract and the intermediate metabolism but also the excretory organs, particularly the kidneys. The functioning of the kidneys is especially influenced by the sodium chloride content of the food. In nephritic disorders the author gained therapeutic effects with salt-free diets. Investigations on the requirements of the organism for sodium chloride have proved that salt-free diets may be continued for weeks and months without causing injurious effects. The author points out that although it is not necessary that the patient be told that sodium chloride is a poison, he should be told that it is not an absolutely necessary addition to foods.

Prerequisites for Effective Therapy of Cancer of Oral Cavity.—Schürch reviewed the cases of cancer of the oral cavity which, during the last ten years, have been treated in the hospitals of eastern Switzerland. He found that the therapeutic results were unfavorable, and that this was mainly due to the fact that the cancer was diagnosed too late. He emphasizes that modern progress in cancer therapy can be of practical value only if the carcinoma is recognized in the early stages and if treatment is begun immediately.

Policlinico, Rome

37: 85-124 (Jan. 20) 1930. Practical Section

*Action of Ergotamine on Hyperglycemia in Otherwise Normal Persons and in Hepatic and Diabetic Conditions. G. Corbini.—p. 85.
Treatment of Wounds of Superior Sagittal Sinus in Cranial Fractures. G. Ferrarini.—p. 90.
Tremor Due to Malaria: Case. C. Catteruccia.—p. 93.
Method of Acetone Research: Technical Details for Analysis of Urine. P. Clara.—p. 95.

Action of Ergotamine on Hyperglycemia in Otherwise Normal Persons and in Hepatic and Diabetic Conditions.—Corbini concludes, on the basis of his researches, that ergotamine is almost inactive in hyperglycemia in otherwise normal persons and in hepatic disorders. In diabetes it has a tendency to lower the blood sugar level, which varies in intensity with the individual case.

Riforma Medica, Naples

46: 1-40 (Jan. 6) 1930

Neurovegetative Dystonia of Hysteroneurasthenic Type. F. Galdi.—p. 4.
*Effect of Liver Diet on Blood Sugar. E. Lombardi.—p. 7.
Pneumothorax of Short Duration in Exudative Types of Pulmonary Tuberculosis. G. Costantini.—p. 14.
Modification of Staining Method for Researches on Tubercle Bacilli in Sputum. S. di Tommaso.—p. 16.

Effect of Liver Diet on the Blood Sugar.—Lombardi states that the researches of Blotner and Murphy and his own are the first to be published on this subject. Blotner and Murphy were induced to make their researches by having observed that certain patients with pernicious anemia, when subjected to a liver diet, presented strange symptoms such as a feeling of hunger, headache, sweats and nervousness, which, as is well known, accompany hypoglycemia. From his researches, the author draws the following conclusions: 1. The pulp of the liver contains an active substance for the reduction of the blood sugar. 2. Reduction of the glycemic index was noted in convalescents from various disorders, in patients with pernicious anemia and pseudopernicious anemia, and in patients with liver deficiency, though less constantly in the last mentioned. 3. The blood sugar in diabetes is greatly reduced by the ingestion of liver pulp (in a boy with diabetes there was a reduction of 0.85 Gm. per thousand), and it appears that, to judge from his results, the reduction is proportionately more marked in the cases in which the initial blood sugar level is high. Researches on a larger scale are being undertaken and will show the remote effects of liver diet on the glycemic index and glycosuria, and whether or not this therapy has a practical application in the treatment of diabetes mellitus. The author is not prepared to make a direct comparison with insulin, but Blotner and Murphy state that 180 Gm. of raw liver pulp will produce the same results as from 10 to 15 units of insulin.

Archivos de Cardiología y Hematología, Madrid

11: 1-56 (Jan.) 1930

*Obscure and Uncertain Forms of Aortitis of Descending Aorta. C. Cortés.—p. 1.
*Treatment of Hemodystrophy with Vitamins. L. Fanjul.—p. 24.

Obscure and Uncertain Forms of Aortitis of the Descending Aorta.—Cortés believes that disease of the descending aorta is more frequent than it is believed to be, but frequently the condition passes unobserved because it occurs in association with some other diseases whose symptoms are more prominent than those of the aortic disease. Among thirty cases of aortitis of the descending aorta observed by the author, ten were erroneously diagnosed and in four the condition was found at necropsy. In these cases, typical aortitis of the descending aorta was associated with one of the following diseases, which were the predominant conditions: pulmonary tuberculosis, tabes, articular rheumatism complicated by some cardiac lesion, arteritis of the legs, and gastro-intestinal disturbances. In all the cases the aortitis was overlooked and only the more apparent condition was diagnosed. The author says that disease of the descending aorta should be borne in mind in all illnesses occurring in syphilitic patients (regardless of the time at which they were infected with syphilis), especially in patients who have received insufficient treatment and in those who have uncertain symptoms. Early diagnosis and early antisyphilitic treatment are important.

Treatment of Hemodystrophy with Vitamins.—Fanjul studied the effect of vitamins on the hemorrhagic diathesis of hemodystrophy. He obtained good results with a vitamin preparation in eight patients, aged from 3 to 41 years, with Henoch's purpura, familial hemogenia, purpura hemorrhagica, hemophilia and hemophiloid conditions. In cases in which the hemodystrophy was complicated by some infection or endocrine dysfunction, the vitamin preparation was associated with the specific treatment for the complicating condition.

Archivos Latino-Am. de Pediatría, Buenos Aires

23: 817-900 (Nov.) 1929. Partial Index

*Enterorenal Syndrome with Predominance of Hematuria in Child Three Years of Age. L. Morquio.—p. 817.
*Athrepsia Treated with Concentrated Artificial Feeding: Two Cases. M. Acuña and P. Winocur.—p. 828.
*Postdiphtheritic Paralysis Treated Without Antidiphtheritic Serum: Sixteen Cases. P. de Elizalde and F. E. White.—p. 839.

Enterorenal Syndrome with Predominance of Hematuria in Child Three Years of Age.—Morquio's patient, aged 3 years, received 0.01 Gm. of emetine hydrochloride for three days as treatment for a dysenteriform enteritis. After the third injection hematuria appeared, giving the wrong impression that the drug had caused it. The presence of a vesical calculus as a cause of the hematuria was disproved by the child's condition and by roentgenography. A renal lesion of bacillary origin was proved, which, associated with the symptoms (diarrheal evacuations of an entericolitic type, vesical disturbances and then hematuria, albuminuria, hemoglobinuria and pyuria), constituted the enterorenal syndrome which is frequent in children, as is proved by the frequent occurrence in them of pyelitis complicating gastro-intestinal diseases. In the author's case an enterocolitis associated with pyelonephritis of hematuric type was evident, and the administration of 2 Gm. of calcium chloride daily, malt soup, orange juice and the application of heat to the abdomen caused a favorable evolution of the disease.

Athrepsia Treated with Concentrated Artificial Feeding.—Acuña and Winocur say that in athreptic infants who under the accustomed diet have a stationary weight, the change to a concentrated artificial diet gives good results. The foods to which the infant has the best tolerance should be selected judiciously, since the individual tolerance is very variable. Athreptic children are insufficiently nourished, and they continue in the same condition while receiving treatment, both because the mother fears to feed them properly, and especially because of the intractable anorexia, which it is necessary to overcome. In these cases a concentrated artificial alimentation should be given, that is, a diet having a high caloric value in a small volume. Besides that, the appetite should be stimulated. The authors' two patients had nutritional disturbances and athrepsia during the first three months of life caused by a mixed alimentation, with predominance of artificial food. In both cases the administration of insulin failed. A concentrated artificial alimentation (in one of the infants carbohydrates predominated and in the other proteins) gave good results.

Postdiphtheritic Paralysis Successfully Treated Without Antidiphtheritic Serum.—De Elizalde and White treated successfully sixteen patients, aged from 7 months to 13 years, with postdiphtheritic paralysis without using antidiphtheritic serum. The attack of diphtheria had been of moderate intensity, the pharyngeal symptoms were predominant and the disease lasted from three to fifteen days. All patients but one received antidiphtheritic serum in amounts of from 5,000 to 49,000 antitoxic units during the primary attack. No relation between the amount of serum used to treat the attack of diphtheria and the extension and aggravation of the postdiphtheritic paralysis could be demonstrated. The paralysis lasted from seven to fifty-two days (except in the infant 7 months old, in whom the disease lasted six months). The localization of the paralysis was in the soft palate, either by itself or in association with paralysis of the legs or of the eye muscles governing accommodation; in only one case was it a generalized paralysis. In all cases the treatment consisted in rest, proper general hygiene, good feeding, and injections of strychnine.

Archiv für Gynäkologie, Berlin

139: 413-677 (Jan. 27) 1930

*Eclampsia: Treatment. W. O. Klein.—p. 413.
Roentgen Measurement of Pelvis with Patient in Sitting Position. W. Schaefer and E. Witte.—p. 438.
Guthmann's Method of Roentgen Diagnosis of Pregnancy. E. Terruhn.—p. 470.
Placenta: Urea Content. E. Wehefritz and E. Gierhake.—p. 479.
Ergot in Relation to Puerperal Gangrene. T. Antoine.—p. 492.
Hydrogen Ion Concentration of Blood During Normal and Pathologic Pregnancies. P. Wirz.—p. 511.
Causes of Periodicity of Estrual Cycle. H. Siegmund.—p. 521.
Estrual Cycle of White Mouse Following Sterilization by Irradiation. F. C. Geller.—p. 530.
Excretion of Proteins and Lipoids by Kidneys in Normal and in Toxic Pregnancies. M. Eufinger.—p. 537.
Fate of Asphyctic New-Born Infants. S. Liebmann.—p. 544.
Paralysis of Radial Nerve in the New-Born. P. Langen.—p. 560.
Anomalies of Lower Portion of Spinal Column: Pathogenic Significance. H. Martius.—p. 581.
Cysts of Female Genitalia: Chemical Peculiarities of Contents. L. G. Schalyt.—p. 614.
Spontaneous Tears of Uterus: Etiology. W. Lissowetzky.—p. 624.
Puerperal Diseases: Blood Picture. A. Schepetinsky.—p. 645.
*Erythrocyte Count and Erythrocyte Sedimentation Rate. I. Vögel.—p. 665.
Dermatitis Exfoliativa Neonatorum: Case. I. Raschkes.—p. 669.

Eclampsia: Treatment.—Klein places patients with prodromes of eclampsia on a strict diet and observes them carefully. Patients with threatened eclampsia are treated by rest, dry diet, stimulation of diuresis and venesection. In patients in the convulsive stage of eclampsia, immediate delivery by cesarean section or forceps is performed, regardless of whether the fetus is alive or dead.

Effect of Erythrocyte Count on Erythrocyte Sedimentation Rate.—In examinations of the blood of 500 persons, Vögel found that the number of erythrocytes did not have an effect on the erythrocyte sedimentation rate.

Beiträge zur Klinik der Tuberkulose, Berlin

73: 117-262 (Dec. 18) 1929

*New Method of Roentgen Examination of Lung. Chantraine and Schulte-Tigges.—p. 117.
Percussion in Latent Foci of Tuberculosis of Lung. T. Hausmann.—p. 141.
Universal Sclerosing Tuberculous Large Cell Hyperplasia. K. Mylius and P. Schürmann.—p. 166.
*New Method of Chemical Treatment in Diseases of Lung. P. Spanier.—p. 210.
Modification of Biologic Acid-Base Equilibrium. M. Mecklenburg.—p. 232.
Effect of Solutions of Lipoids on Growth of Acid-Fast Bacilli. T. Nyrén.—p. 238.
*Pulmonary Tuberculosis: Treatment with Convalescent Blood. J. Leitner.—p. 251.
Gold Preparations Used in Treatment of Pulmonary Tuberculosis. S. Laurinavičius.—p. 255.

New Method of Roentgen Examination of Lung.—Chantraine describes the technic and the apparatus employed in roentgen examination of the lung with a machine using alternating current and with a roentgen tube having a revolving anticathode. Schulte-Tigges, by means of a series of comparative roentgenograms, demonstrates the superiority of this method of roentgen examination of the lungs over the method now in use.

New Method of Chemotherapy in Diseases of Lung.—Spanier describes experiments on animals in which he demonstrated that it is possible to use heterogenous leukocytes that have phagocytosed a therapeutic agent as a vehicle for transporting the therapeutic agent to the lung. He states that the blood carrying the products of metabolism of the entire organism is freed (at least in part) from these products in the lungs, where they are retained and destroyed. Heterogenous leukocytes injected intravenously pass to the lungs and are retained there. The leukocytes have the power of taking up therapeutic agents and transporting them to the lungs, acting as a purely mechanical vehicle. During the time that the leukocytes are retained in the lung the agent comes in contact with the lung tissue and exerts its therapeutic action.

Pulmonary Tuberculosis: Treatment with Convalescent Blood.—Leitner reports good results in the treatment of fifteen persons with pulmonary tuberculosis by means of intragluteal injections of Wassermann negative blood from patients who had recovered from an attack of acute tuberculosis. He used blood that had been only defibrinated, blood that had been only centrifugated (plasma) and blood that had been both defibrinated and centrifugated (serum), but he did not observe a difference in the therapeutic action of the three kinds of injections.

Deutsche medizinische Wochenschrift, Berlin

56: 169-210 (Jan. 31) 1930

Inefficacy of Peroral Administration of Mixture of Insulin with Sodium Desoxycholate. F. Umber and M. Rosenberg.—p. 169.
*Results of Specific Desensibilization Treatment in Hay-Fever During 1929. K. Hansen and Michenfelder.—p. 172.
Clinical Observations on Psittacosis. G. Grunwald and F. Meyer. —p. 174.
Psittacosis: Two Cases. H. Kaliebe.—p. 179.
Prophylaxis of Tetanus by Means of Serum. H. Schmidt.—p. 179.
Injection Treatment of Hemorrhoids. H. Elsner.—p. 180.

Results of Specific Desensibilization Treatment in Hay-Fever During 1929.—Hansen and Michenfelder state that the specific desensibilization treatment of sixty-five patients with hay-fever resulted in improvement in fifty-three cases. Forty of these patients either showed only slight symptoms or were entirely free from them. The efficacy of the treatment depends primarily on the correctness of the diagnosis. The authors assert that the general practitioner can make correct diagnoses. A nonspecific treatment with a mixture of extracts which has not been tested in cutaneous reactions on the patient receiving treatment is of no value and is therefore not recommended by the authors. Hay-fever speaks for a specific pathogenicity of pollen and only specific desensibilization can bring the desired results. The authors point out that the specific therapy of hay-fever is contraindicated in acute and chronic diseases and during pregnancy.

Deutsche Zeitschrift für Chirurgie, Leipzig

222: 1-144 (Jan.) 1930

*Diagnosis and Differential Diagnosis of Exophthalmic Goiter. K. E. Bach.—p. 1.
*Increased Incidence of Fatal Pulmonary Embolism. H. Domrich.—p. 20.
*Phrenic Exeresis in Treatment of Pulmonary Tuberculosis. M. Ernst. —p. 30.
*So-Called Cardiospasm: Symptoms and Treatment. W. Rieder.—p. 47.
*Significance of White Bile in Surgery. F. Bernhard.—p. 66.
The Circulation of Blood in the Portal System. T. Naegeli.—p. 92.
Explanation of Failure of Gallbladder to Fill During Cholecystography. L. Kaulich.—p. 97.
*Late Death from Hemorrhage After Operation for Acute Necrosis of Pancreas Result of Erosion from Sepsis of Pancreaticoduodenal Artery. P. Walzel.—p. 102.
*Spontaneous Perforation of Dilated (Adynamic) Duodenum Four Years After Subtotal Resection of Stomach for Ulcer. G. Eichelter.—p. 106.
*Late Perforation of Blind End of Intestine Used to Make a Side to Side Anastomosis. O. Gros.—p. 115.
*Chronic Intestinal Occlusion (Ileus) and a "Second" Disease. W. Brandesky.—p. 117.
*Pneumoperitoneum with High Degree of Tension. W. F. Suermondt. —p. 125.
Determination of Deficiency of Oxygen in Blood as Indication for Collapse Therapy and Other Surgical Procedures in Treatment of Pulmonary Diseases. K. Henius.—p. 134.
Epithelial Cyst of Carpal Region Containing Shrapnel. E. Orbach. —p. 135.

Diagnosis and Differential Diagnosis of Exophthalmic Goiter.—Sixty cases submitted to operation are analyzed by Bach. Seven of these terminated fatally. In all of these fatal cases, cardiac symptoms were sufficiently dominant to be noted, especially in the history. In four of them the basal metabolism ranged between 50 and 100 per cent plus. In six the presence of a status thymicolymphaticus was noted. Of the fifty-three surviving patients, only ten were found to have a pathologic condition of the heart, although tachycardia, of varying degree, was a common finding in many cases. There were no arrhythmias or disturbances of conduction. In the favorably progressing cases the basal metabolism averaged about 47 per cent. The author concludes that death in cases of exophthalmic goiter is a so-called heart death. All of his fatal cases were either very near the decompensation stage or had already gone beyond it. The four cardinal symptoms—struma, tachycardia, exophthalmos and tremor—have been the only ones on which any reliance can be placed in diagnosis. The reaction against large doses of iodine is of value in the differentiation between thyrotoxicosis and exophthalmic goiter. The basal metabolism determination is of doubtful differential value. It is essential to note the state of the heart before operating because bad hearts lead to bad endings.

Incidence of Fatal Pulmonary Embolism.—Domrich states that since 1924 the incidence of fatal lung embolism has increased three or four times in two hospitals mentioned. The greatest increase has occurred in cases of malignant tumor. The diseases of women and the maternity cases have not caused any increase; in fact, they show a decreased incidence—one fifth of the fatal cases as against one half in 1925.

Phrenic Exeresis in Treatment of Pulmonary Tuberculosis.—Ernst directs attention to the danger of misinterpreting the effects of this operation by making too early a report. Not sufficient time is permitted to elapse between the time of operation and the report of results. Even after three or four years the disease may flare up again. He analyzes 485 cases in which the diaphragm was paralyzed between 1920 and 1928. In 185 of these cases, phrenico-exeresis alone was performed. Only fifteen of the patients are cured and able to work. Five of these had had isolated cavities in the lower lobes; four had disease of the upper lobes and four had advanced disease on one side as well as involvement of the other. He is convinced that artificial paralysis of the diaphragm alone seldom effects a cure in unilateral tuberculosis. Forty-two patients who had been urged to have further surgical treatment but refused died a few months after the phrenico-exeresis. Collapse therapy should be instituted soon after the operation if it is noted that the latter is ineffectual. Every case in which this was not done has gone on to a worse state. A slight improvement following the first operation may cause a patient to decline further intervention, but in every such case the condition of the patient was so bad a few months afterward that a second operation was out of the question.

Treatment of Cardiospasm.—Rieder analyzes the results of the treatment of nineteen cases. First, all the patients were treated by means of diet, psychotherapy, washings and antispasmodics. The result was entirely nil. Next, dilation was resorted to and seven patients became entirely well. The remaining twelve did not show improvement. Only one of the seven is entirely well. Two still vomit when they eat fast; two cannot swallow cold foods as well as they could before the dilation; two are almost entirely well. In the twelve unimproved patients various surgical procedures were employed. In two cases Mikulicz dilation proved unavailing; a gastric fistula in one case was a failure; Starck's dilation effected a cure in one case and improvement in another and left a third unimproved; resection of the vagus fibers at the cardia and cardioplasty were of no avail in one case. Heller's operation was done in six cases with cure in three; one patient was almost cured, and in two the result was good.

So-Called White Bile.—Bernhard has seen this white bile in twenty-five cases among a total of 5,613 operations on the bile passages. It is found in the gallbladder and is probably the result of stasis or compression. It is seen more often in cases of cholelithiasis than in other pathologic states of the gallbladder. In his twenty-five cases the cause was stone in the choledochus in sixteen; cholecystitis with stones in one, and compression of the choledochus by a tumor in eight. In the cases of cholelithiasis with white bile, jaundice may be absent. The author stresses the fact that white bile cannot be regarded as a pancreatic secretion. It is a hypersecretion of the biliary mucosa with more rapid resorption of bile. Bacteria do not play any part in its production. None of the constituents of normal bile are present. Among 844 choledochotomies white bile was present eighteen times; among 121 entero-anastomoses it was present seven times. The presence of white bile makes the prognosis less favorable. In the choledochotomies the mortality was 9.37 per cent in cases in which white bile was not present, and 22.2 per cent in the cases of white bile. In the entero-anastomoses, the mortality was 10 and 43 per cent.

Late Fatal Hemorrhage from Pancreas After Operation.—In the case cited by Walzel an acute necrosis of the pancreas was followed by suppuration. He operated, and six week later a sudden hemorrhage from the pancreaticoduodenal artery led to the death of the patient. The author believes that this hemorrhage was caused by erosion of the artery due to the extrusion of sequestrums of the pancreas.

Spontaneous Perforation of Duodenum After Operation on Stomach.—Four years previous to this accident, Eichelter had performed a subtotal resection of the stomach by the Billroth II method for ulcer. A carcinoma developed at the site of the resection and constricted the lumen of the duodenum without actually obstructing it. Finally, after four

years, atony, extreme dilatation and eventually perforation occurred. The diagnosis before operation was perforated duodenal ulcer. The real nature of the condition was discovered at operation. The patient died of peritonitis.

Perforation of Intestine After Anastomosis.—Gros cites the case of a woman who had been operated on for an incarcerated femoral hernia ten years before he saw her. She came to him with a diagnosis of perforative peritonitis. At the time of the hernia operation, it was necessary to perform a resection of the bowel and a side to side anastomosis was made. When Gros operated he found a perforation in the blind end of one of the intestinal segments. He points out the desirability of making these ends as short as possible when an anastomosis is made, and by means of fixation preventing their invagination through the anastomotic opening.

Coexisting Diseases of Abdomen.—Brandesky calls attention to the fact that two wholly unrelated diseases may coexist in the abdominal cavity. He cites two such cases. One was in a woman who became ill with appendicitis. The appendix was removed and was found to have perforated. The wound refused to heal. Finally an intestinal fistula developed. Intestinal contents were extruded. Then the bowel bulged out of the wound. It looked suspicious. Examination disclosed adenocarcinoma. The patient died of cachexia five months after the appendectomy. Therefore, it was quite evident that the malignant disease was already far advanced when the appendix became diseased. At the necropsy a large adenocarcinoma, encircling the bowel, was found at the junction of the sigmoid with the rectum. The second patient had also been operated on for an acute appendicitis eleven years previously. Suddenly he developed symptoms that led to a diagnosis of perforated gastric ulcer, which was confirmed at operation. At the same time an adhesion was found originating in the mesentery near the ileocecal valve which pulled the ascending colon over to the right, just above the cecum. Evidently these adhesions had developed after the appendectomy and had caused some symptoms from which the patient had complained for seventeen years. Then the gastric ulcer developed and the perforation called for an immediate operation. At this operation the chronic ileus was accidentally discovered.

Pneumoperitoneum with High Degree of Tension.—Suermondt has collected fourteen cases from the literature in which this condition was reported. Six followed perforation of the stomach; two a kidney operation, in which doubtless a small tear of the peritoneum went unnoticed, and one each a carcinoma of the rectum, typhus, severe appendicitis, enteritis, an intra-uterine operation, and a perforating wound of the abdomen. He also reports one personal case following a peritonitis caused by a gangrenous appendicitis. In order to have this condition develop, it is essential that a communication exist between the abdominal cavity and some air containing organ, or with the outside.

Klinische Wochenschrift, Berlin

9: 193-240 (Feb. 1) 1930

Psittacosis. B. Heymann.—p. 193.
Relation Between Skin Diseases and Internal Secretions. Oswald. —p. 196. C'en.
Course and Epidemiology of Psittacosis. F. Günther.—p. 203.
*Idiosyncrasy: Several Unusual Cases of Dermatitis Venenata. A. Steiner-Wourlisch.—p. 205.
Detoxicated Phenolphthalein as Purgative. S. Loewe and F. Lange. —p. 207.
Blood Group Tests on Normal Rabbits and on Those Treated with Killed Typhoid Bacilli. P. von Gara.—p. 209.
Formation of Succinic Acid from Pyroracemic Acid in Perfusion of Surviving Muscles of Mammals. E. Toenniessen.—p. 211.
*Effect of Intravenous Injection of Dextrose on Ketonuria in Diabetes Mellitus and in Diabetic Coma. I. St. Lorant and E. Froehlich. —p. 213.
Examination of Gastric Secretion Without Withdrawal of Gastric Juice. Cohen and Brock.—p. 214.
Functional Tests of Islands of Langerhans: Rôle of These Structures in Pathogenesis of Adiposity. F. Depisch and R. Hasenöhrl.—p. 215.
Idem. B. Aschner.—p. 216.

Idiosyncrasy: Several Unusual Cases of Dermatitis Venenata.—Steiner-Wourlisch describes several cases of eczema that were caused by idiosyncrasy to plants or to drugs. His report also indicates the practical significance of cutaneous tests. The first case reported concerned a woman who had an acute eczema on the face and on the left wrist. Because the woman had been in contact with primroses, they were considered the causal factor. However, a cutaneous test with a primrose leaf gave a negative result. Among her plants the woman had several specimens of moth-mullen. Application of a leaf of moth-mullen gave a local reaction and the eczema became more severe. The usual therapy was instituted and the eczema disappeared in eighteen days. The author points out that moth-mullen is kept in many homes as a decorative plant and that the leaves are sometimes placed between clothing to keep moths away. It is therefore probable that this plant is occasionally the cause of eczemas. The second case described by the author occurred in a girl, aged 18. In this instance the eczema could be traced to contact with primroses. Medication with quinine caused eczema in two cases. In the first of the two, the patient had taken tablets containing quinine. A cutaneous test was made with one of the tablets and a positive reaction resulted. Then the patient's susceptibility to quinine was tested, and the reaction was again strongly positive. The other patient was a woman who developed eczema following the use of vaginal suppositories that contained quinine. The fifth case reported concerns a woman who developed an exanthem following medication with arsphenamine. A cough medicine containing codeine likewise caused eczema. Tests revealed that she also had a hypersusceptibility to opium, to morphine, to procaine hydrochloride and to solution of corrosive mercuric chloride. However, she did not show idiosyncrasy to iodine and to a derivative of barbituric acid. This case is remarkable not only because the patient had a polyvalent idiosyncrasy but also because of the intensity of the reactions.

Effect of Intravenous Injection of Dextrose on Ketonuria in Diabetes Mellitus and in Diabetic Coma.—Lorant and Froehlich direct attention to the fact that in the treatment of diabetic coma injections of dextrose are still used. It is generally assumed that they prevent hypoglycemia and counteract ketonemia. The authors assert that hypoglycemia is not so dangerous for the organism as diabetic coma and that the injection of dextrose does not prevent the later development of hypoglycemia. Because it is absolutely necessary to effect a reduction of the blood sugar content, the preliminary dextrose injection necessitates the injection of larger amounts of insulin. These larger quantities of insulin make the danger of hypoglycemia greater. On the other hand, the dextrose injections prolong the coma. It is known that dextrose counteracts ketonemia in the diabetic organism; however, it is questionable whether it has the same effect during the coma. The authors made careful observations on comatose patients and found that following dextrose injections the ketonemia increased considerably and that the increase persisted for about two hours after the injection. On the basis of their observations they conclude that intravenous injections of dextrose are not advisable because they retard the reduction of the sugar content, and by necessitating the administration of larger amounts of insulin the danger of hypoglycemia is increased. Dextrose injections also increase the ketone bodies in the blood. The only favorable effect of dextrose injections is that they temporarily increase the blood pressure.

Medizinische Klinik, Berlin

26: 113-152 (Jan. 24) 1930

Hypertrophy of Prostate: Pathology, Diagnosis and Treatment. P. Rosenstein.—p. 113.
Surgical Treatment of Cancer of Female Genitalia. W. Weibel.—p. 117.
Biologic Investigations on Hormonal Substance in Brain. E. Steinach and H. Kun.—p. 119.
Endonasal Method in Surgical Treatment of Tumors of Hypophysis. O. Hirsch.—p. 121.
*Treatment of Lenta Form of Meningococcus Sepsis with Injections of Acriflavine Hydrochloride. A. Bötzel.—p. 127.
Obstinate Hiccup: Etiology, Mechanism and Surgical Therapy. A. Jirásek.—p. 128. C'en.
Validity of Bernstein's Formula Concerning Hereditary Transmission of Blood Groups. W. Fischer.—p. 130.
Isacen for Treatment of Constipation During Puerperium. A. Bär.—p. 132.

Treatment of Meningococcus Sepsis with Injections of Acriflavine Hydrochloride.—Bötzel reports two cases showing the symptomatology of the lenta form of meningo-

coccus sepsis. The patients had an exanthem similar to that of erythema multiforme. Their joints were swollen and painful. The fever curve was irregular, somewhat like that of a tertian malaria infection. During the intervals that were free from fever the patients felt comparatively well. The blood picture revealed a leukocytosis and a marked deviation toward the left. Meningococci were cultivated from the blood. Both patients recovered after an intravenous injection of 0.6 Gm. of acriflavine hydrochloride. The author points out that spontaneous recoveries have been observed in this disease. However, if treatment is not instituted, the disease may last months and may lead to meningitis, in which case the prognosis becomes unfavorable. The fact that the two patients recovered shortly after the injection of acriflavine hydrochloride convinced the author that the recovery was the result of this treatment. Other authorities have employed different therapeutic methods. Ethylhydrocupreine, which is administered intraspinally in epidemic meningitis, was given perorally in cases of this type but it was without effect. Good results have been obtained with autovaccines. Treatment with meningococcus serum has been successful in some instances; in other cases, however, it was without effect. This is understandable when it is considered that there are various types of meningococci. Some authors employed acriflavine hydrochloride in smaller doses. They administered from 0.05 to 0.1 Gm. each day. Their results were not so favorable as those obtained by the author, who recommends injection of from 0.6 to 0.75 Gm. In conclusion, it is stated that although the injection with acriflavine hydrochloride is effective in cases in which the infection takes a slow course, it usually fails in acute cases.

Monatsschrift für Kinderheilkunde, Leipzig

45: 481-576 (Jan.) 1930

Pylorospasm in Nurslings: Treatment. W. Birk.—p. 481.
*Fever: Prevention of Nitrogen Loss by Administration of Carbohydrates. O. Beck.—p. 498.
*Treatment of Severe Nutritional Disturbances and Infectious Diseases by Injections of Human Blood or Serum. W. Baumann.—p. 509.
Duties of School Physician. A. Keller.—p. 523.

Fever: Prevention of Nitrogen Loss by Administration of Carbohydrates.—In the treatment of nurslings with fever, Beck found that by the addition of 17 per cent of cane sugar to the milk or by the administration of a large amount of sugared water, in addition to the regular food, he was able not only to prevent the nitrogen loss, which is always present in fever, but even to increase the nitrogen retention. He believes that his observation explains the old lay practice of giving children (and adults) with fever highly sweetened drinks, as lemonade. Although this was done because of the refreshing action of the fruit juice, it is now known that the sweetened drink was of therapeutic value from the standpoint of nutrition.

Treatment of Severe Nutritional Disturbances and Infectious Diseases by Injections of Human Blood or Serum.—In the treatment of nutritional disturbances and infectious diseases in children, Baumann has obtained good results with injections of human blood or serum. In cases in which a vein is sufficiently large and blood of the same blood group is available, it is given intravenously. In cases in which the vein is too small or the blood groups do not correspond, the donor's blood is centrifugated and the serum is given intramuscularly.

Münchener medizinische Wochenschrift, Munich

77: 133-172 (Jan. 24) 1930

Influence of Internal Secretions on Development of and on Disorders in Female Genitalia: Hormone Therapy in Gynecologic Disorders. L. Seitz.—p. 133.
Clinical Aspects and Treatment of Incontinentia Urinae in Women. Von Mikulicz-Radecki.—p. 136.
*Psittacosis: Description of Cases Observed in Berlin and Present Status of Bacteriology of This Disease. G. Elkeles.—p. 139.
*Id.: Symptomatology of Cases Observed in Hamburg. H. Embden and G. Adamy.—p. 140.
Photometric Determination of Cholesterol Content of Serum. E. Brill and G. Hopf.—p. 142.
*Diabetic Symptoms in Disorders of Thyroid and in Tumors of Suprarenals. G. Wüllenweber.—p. 144.
*Salicylic Acid Applied in Crayon Form for Local Therapy of Female Genitalia. H. Treber.—p. 146.
*Salicylic Acid in Treatment of Inflammatory Processes in Female Genitalia. O. Köster.—p. 146.
Complete Deprivation of Fluids not Advisable in Early Childhood. K. Ochsenius.—p. 147.

Psittacosis in Berlin.—Elkeles reports cases of psittacosis that occurred during November, 1929. The clinical aspects were more or less the same in all patients, except as to the degree of severity. A feverish disease was accompanied by cerebral symptoms and vascular weakness. It was followed by an atypical pneumonia without or with slight expectoration. The cases observed by the author were in members, servants or friends of the family of a Berlin geologist who, returning from a trip to Brazil, had brought home four parrots. Three of these birds became sick and died. Two of them had been kept in the home of the geologist and two had been given to friends. All members of his own household, with one exception, and also friends who had frequented the house became ill. In two cases the disease had a fatal outcome; in the other recovery took place. Several other groups of cases of psittacosis occurred in families which had bought recently imported parrots. In order to determine the etiology of the disease, the pharyngeal smears, sputum, blood, feces and urine of patients were subjected to careful bacteriologic examinations. During the necropsy on the three patients who had died from psittacosis bacteriologic and histologic examinations were made. Numerous types of bacteria were cultivated. However, none of them had a causal relation to the disease. The parrots that had died were already in a state of putrefaction and only proteus bacilli were found. Other parrots that had spread the infection showed no signs of disease. The histologic examinations of these birds have not been completed. The author further reviews the theories concerning the pathogenic microorganism of psittacosis. In 1892 Nocard discovered a bacillus which he considered to be the cause of this disease and which he designated *Bacillus psittacosis*. However, more recent investigations have proved that this bacillus is identical with *Bacterium paratyphosum-enteritidis* Breslau, which is found in nearly all epidemic-like infections occurring in animals. The author thinks that this bacillus might cause paratyphoid enteritic disorders in human beings, but he does not consider it probable that the generalized infection with following atypical pneumonia is due to this micro-organism. Selter, who investigated cases of psittacosis in 1909, made discoveries which indicated that a certain type of streptococcus is the pathogenic agent. When the pulmonary aspects of psittacosis are considered, a streptococcus would appear to be the probable cause. However, it could not be demonstrated that this streptococcus was the actual cause of the disease. The author concludes that additional investigations will be required to solve the problem of the etiology of psittacosis. Cases of psittacosis were also observed in Argentina. These could likewise be traced to parrots that had been imported from Brazil. The author suggests measures for the prevention of psittacosis.

Psittacosis in Hamburg.—Embden and Adamy describe fourteen cases of psittacosis. In all instances the disease could be traced to infected parrots that had been recently imported from South America. The symptoms were nearly the same in all cases. There was high fever, delirium and symptoms of an atypical pneumonia. Some cases had a fatal outcome. Bacteriologic investigations on diseased parrots are now under way. The fact that psittacosis may also be transmitted from one human being to another makes the disease more dangerous. The authors advocate that the importation of parrots be prohibited.

Diabetic Symptoms in Disorders of Thyroid and in Tumors of Suprarenals.—Wüllenweber points out that whenever diabetic symptoms are detected, changes in the pancreas are generally thought of, although it is known that carcinoma and necrosis of the pancreas may exist without causing diabetic disturbances and, on the other hand, glycosuria is often observed in disorders of other organs. The author reports the case of a woman, aged 54, who complained of weakness, and of pains in the left ear and on the left side of the neck. She had a subfebrile temperature. Tests of the urine revealed a sugar

content of 5.2 per cent and considerable amounts of acetone. The blood sugar level was also extraordinarily high. The woman stayed at the hospital for further observation. During this time she received treatment for diabetes. After four weeks, the skin on the left side of the neck became reddish and tense. This inflammation developed into an abscess of considerable size. When it was opened a large amount of pus was discharged. Five days later the urine was free from sugar, acetone and diacetic acid. However, a slight hyperglycemia persisted for about fifteen months. Because the woman had never before been subject to diabetes, and because it decreased and finally disappeared after recovery from the abscess, the author assumes that this thyroid abscess was the cause of the diabetic disorders. The existence of a correlation or an antagonism between the thyroid and the pancreas has been proved by experimental investigations and by clinical observations. Therefore, the author thinks that the abscess had caused inflammation and irritation of the thyroid and that this in turn had influenced the sugar metabolism. The author further reports two cases in which diabetic disturbances resulted from disorders of the suprarenals. One patient, a woman, aged 42, had been under medical care for two years on account of renal disorders. More recently sugar, acetone and diacetic acid had been discovered in the urine. She also developed hypertension, tachycardia and a bluish discoloration of the skin. Insulin treatment did not influence the diabetic symptoms and a fatal outcome resulted. Necropsy revealed bilateral tumors of the suprarenal medulla, calculi in the renal pelvis and ectasia of the left renal pelvis. The diabetic symptoms are understandable when it is considered that epinephrine, the product of the suprarenal medulla, influences the sugar metabolism. The other case described by the author concerns a woman, aged 57, who likewise had renal disturbances, hyperglycemia and glycosuria. The patient showed a temporary improvement lasting several months. Following an exacerbation she died and the postmortem examination revealed a large hypernephroma, pyelitis, renal abscess and hemorrhagic cystitis. The pancreas did not show pathologic changes. It could not be explained in what manner the hypernephroma had influenced the sugar metabolism. The author points out that the glycosuria disappeared simultaneously with the pyelitis. From this he concludes that the diabetic disorder was a result of hyperemia of the suprarenals.

Salicylic Acid in Crayon Form Applied Locally in Vagina.—Treber relates his experiences with salicylic acid therapy of the leukorrhea that usually accompanies parametritis and adnexitis. In order to prevent an excessive caustic effect he employed it in the form of 2 Gm. crayons containing 0.25 Gm. of salicylic acid. Every second day two of these crayons are introduced into the vagina. After three or four treatments the discharge decreases. During the following three or four applications one crayon is sufficient. The author employed this treatment successfully not only in the catarrhal disorders that concur with parametritis but also in gonorrhea of long duration. He thinks that the efficacy of salicylic acid is due to its resorptive, bactericidal and hyperemia producing action.

Salicylic Acid in Treatment of Inflammatory Processes in Female Genitalia.—Köster employed salicylic acid according to the method described by Treber in the treatment of eighteen cases. He obtained favorable results.

Wiener Archiv für innere Medizin, Vienna

19: 413-634 (Jan. 15) 1930

Human Gastric Juice: Chemistry. P. Mahler.—p. 413.
*Blood Serum: Specific Gravity. U. Strasser.—p. 451.
*Diseases of Joints: Hereditary Transmission. E. Zellner.—p. 477.
*Effect of Resection of Muscular Layer of Small and of Large Intestine. A. Müller-Deham and L. Reich.—p. 489.
Congenital Isolated Dexiocardia. H. Rösler.—p. 505.
Origin of Interference Dissociation and Retrograde Conduction of Ventricular Extrasystoles. W. Dressler.—p. 611.

Blood Serum: Specific Gravity.—Strasser describes the technic of determining the specific gravity of blood serum and emphasizes the diagnostic and prognostic value of such determinations in diseases of the kidneys and heart.

Diseases of Joints: Hereditary Transmission.—Zellner reports six instances of hereditary transmission of arthritis and one instance of hereditary transmission of bilateral habitual luxation of the patella.

Effect of Resection of Muscular Layer of Small and of Large Intestine.—Müller-Deham and Reich state that in dogs in which they had resected the muscular layer of portions of the small and the large intestine, they demonstrated roentgenologically over a long period of time undisturbed passage of the normal intestinal contents and absence of signs of stenosis.

Wiener klinische Wochenschrift, Vienna

43: 161-192 (Feb. 6) 1930

Constitution and Cancer. A. Fraenkel.—p. 161.
Clinical, Experimental and Therapeutic Experiences with Intestinal Irrigator in Dermatology. E. Urbach.—p. 164.
*Hemolytic Jaundice. K. Paschkis.—p. 166.
Ectopic Orifice of Ureter and Pyonephrosis in Nursling Aged Six Months. T. Hryntschak.—p. 169.
Deviation to the Left in Chronic Lymphatic Leukemia. E. Priessner.—p. 170.
Individual Reactions Following Administration of Medicaments. H. Januschke.—p. 173.
Relation Between Endocrine Disturbances and Dwarfishness or Gigantism. A. Priesel.—p. 174.
Treatment of Diarrheal Disorders in Nurslings. A. Reuss.—p. 174.

Hemolytic Jaundice.—Paschkis points out that familial hemolytic jaundice is now generally recognized as a definite disease entity. However, some authorities assert that there is also an acquired form which has the same symptomatology as the congenital, familial form, namely, spleen tumor, acholuric icterus, urobilinuria, microcythemia and hypercholia of the feces. The author gives a detailed report of three cases which at first seemed to be acquired forms of hemolytic jaundice, but careful investigations revealed that they were congenital forms. These observations prove the author's assumption that cases of acquired hemolytic jaundice do not exist, and that these presumably acquired forms were manifestations of formerly latent anomalies. This form of hemolytic jaundice does not, of course, include those types of jaundice in which disintegration of the blood is due to other causes, as in the resorption of a large hematoma and in some cases of paroxysmal hemoglobinuria. These are acquired conditions and are sometimes designated as symptomatic hemolytic jaundice. However, this term is not quite fitting, because the clinical as well as the hematologic symptomatology of these conditions in entirely different from that of hemolytic jaundice.

Zentralblatt für Chirurgie, Leipzig

57: 129-192 (Jan. 18) 1930

Bleeding Nipple in Male. B. Martin.—p. 130.
Separation of Symphysis Pubis. F. Krauss.—p. 134.
*Value of Disinfection of Field of Operation with Tincture of Iodine and Alcoholic Solution of Tannin. A. A. Ožereliev.—p. 136.
*New Method of Hemostasis in Suprapubic Prostatectomy. Z. Kairis.—p. 138.
Technic of Percutaneous Intravenous Infusions. F. Felsenreich.—p. 139.
*Combining Rachianesthesia with Local Anesthesia in Laparotomies of Long Duration. Hortolomei.—p. 142.
*Foreign Body Granulomas. M. Siebner.—p. 144.

Effective Wound Sterilization with Tannin.—Ožereliev has made animal experiments and on the basis of his results and of clinical observation he recommends the use of a 5 per cent alcoholic solution of tannin. As a sterilizing agent it is as effective as tincture of iodine and does not cause any skin irritation. It is stated that it is difficult to remove tannic acid stains from fabrics. He says that this is not true if the stains are treated with 1 per cent solution of oxalic acid and the material is washed in the usual manner within forty-eight hours.

Hemostasis in Suprapubic Prostatectomy.—Kairis has resorted to a modification of the method originally proposed by Logothetopoulos during abdominal operations. After the prostate has been enucleated, a stab wound is made in the perineum. A Mikulicz tampon, somewhat larger than the bed of the gland, is passed from above downward and out through the perineal opening. Both ends are tied tightly over an ordinary rubber pessary lying on the perineum and then clamped securely. Five or six hours after the operation the clamp is removed. On the third or fourth day he begins to remove the strips of gauze

from the tampon. The job is completed in two or three days. This tampon is intended to make pressure on the bed of the gland, thus preventing bleeding. In the event of later hemorrhage, hemostasis may be effected by tightening the clamp or even retying the tampon over the pessary. The method has proved very satisfactory.

Combining Rachianesthesia with Local Anesthesia in Abdominal Operations.—Hortolomei prefers rachianesthesia in all laparotomies and operations on the lower extremities. He has employed it in 6,100 cases without a single fatality. In the same period of time (ten years), among 2,600 chloroform anesthesias, he has had three deaths. In 4 per cent of the rachianesthesias urinary retention resulted. He combats this with intravesical injections of 20 per cent boric acid in glycerin. There has not been a single case of bladder paralysis or paresis, or paraplegia of the extremities. In six cases there was paralysis of the oculomotor nerve, but this disappeared by the fortieth day. In 6 per cent of the cases he failed to secure anesthesia. There was no difficulty in continuing the operation under ether or chloroform anesthesia. He regards this form of anesthesia as being free from postoperative complications; the lungs, liver and kidneys are never affected, and hence it is an admirable anesthetic for operations on the stomach, spleen and kidney. The abdomen is quiet; there is no distention or vomiting. The anesthesia does not last longer than one and a quarter hours; therefore, when the operation is of longer duration he resorts to splanchnic anesthesia with procaine hydrochloride and epinephrine. In twenty-seven gastropylorectomies in which he was compelled to complete the operation under ether or chloroform anesthesia, there were five severe pulmonary complications, with three deaths. He has never had this experience with the combination of rachianesthesia and splanchnic anesthesia.

Foreign Body Granulomas.—Siebner relates three cases in which a cotton thread was found in the center of a granuloma removed surgically. Two of the patients were women. The granuloma had formed on the buttock, quite close to the anus. When the tumor was removed, a cotton fiber was found in its center. One woman stated that she chafed easily on walking and therefore often wore a cotton pad, like a sanitary napkin. The other woman was an ardent ski runner. She too wore a napkin because of severe chafing. The third patient, a man, stated that he had sat on a needle, which entered his thigh. He removed the needle. When the granuloma which developed later was incised, a piece of black thread was found in its center. Evidently the needle had been threaded when it entered the leg, and when it was withdrawn the thread remained behind.

57: 193-256 (Jan. 25) 1930

Significance of White Bile in Surgical Procedures. F. Bernhard.—p. 194.
*Cause of Death in Pulmonary Embolism. S. Frey.—p. 196.
Lipogranulomatosis of Hernial Sac. W. Potapow.—p. 206.
Traumatic Epithelial Cyst in Terminal Phalanx of Forefinger. C. Friedländer.—p. 209.
Special Apparatus for Simplifying Application of Bandages to Patients Still Under Influence of Anesthetic. T. Fohl.—p. 213.

Cause of Death in Pulmonary Embolism.—Frey is of the opinion that failure of the heart action, caused by the reflex and mechanical effect of the embolus, is the real cause of death in these cases. He terms it a "cardiac death."

Nederlandsch Tijdschrift voor Geneeskunde, Haarlem

74: 129-236 (Jan. 11) 1930

Disorders of Hip Joint. J. H. Zaaijer.—p. 130.
*Newer Knowledge of Leprosy. L. S. Huizinga.—p. 136.
Nephrotomy. A. Geesink.—p. 141.
Idem. P. H. Hartz and A. Geesink.—p. 149.

Newer Knowledge of Leprosy.—Huizinga calls attention to some of the more recent results of researches on leprosy. Dr. Shiga of the Imperial Institute in Seoul, Korea, has announced that he is engaged in growing on an artificial culture medium a pure culture of *Mycobacterium leprae* from human lepromas obtained from various leper colonies in Korea. This brings nearer the possibility of using a serum in the treatment of leprosy. Whether or not the leprosy bacillus produces toxins is unknown. Some investigators consider the symptoms of leprosy as manifestations of an allergic action. After the age of 40 has been reached, the danger of infection appears to be slight. Infection in utero appears certain; Japanese investigators have reported two cases. It is maintained that the Wassermann reaction in leprosy is negative, but more observations are needed to confirm this. In spite of bone resorption, the calcium content of the blood serum in patients with leprosy is normal. In India trial treatments with injections of bacteriophage have been undertaken, but the results have not yet been published. The variable incubation period seems to indicate that the leprosy bacillus may remain inactive after it has entered the human body, or that it develops so slowly that it takes years before symptoms appear. The "latent infection" does not appear to be confined to the port of entry, though some assume that it is localized in the superficial lymph nodes. Eye specialists have found that from 25 to 80 per cent of lepers have some eye disorder. In Carville, La., the author found 50 per cent thus affected and in Korea 35 per cent. Iritis is probably the most frequent cause of blindness in patients with leprosy. Since sooner or later eye disorders are likely to develop, leading often to blindness, early treatment of the eyes is important. Bacilli persist longest on the nasal mucosa. In rebellious cases, the injured portion of the nose may be treated with diathermy, which will finally kill the persisting bacilli. The author is convinced that the problems connected with the combating of leprosy cannot be solved in the laboratory. Epidemiologic work on the ground must supplement the work of the laboratory. At present, attention is so fixed on the disease itself that very little endeavor is made to apply the proper preventive measures.

Finska Läkaresällskapets Handlingar, Helsingfors

72: 1-97 (Jan.) 1930

Health Conditions and Care of Sick in Prison Camps in Helsingfors, Sveaborg Fortress, Sandhamn and Mjölö Islands After War of Independence, 1918. R. Sievers.—p. 1.
*Immunobiologic Conditions in Tuberculosis. W. Backman.—p. 71.

Immunobiologic Conditions in Tuberculosis.—This is a study by Bachman of tuberculosis in certain districts of Finland covering the years from 1774 to 1920.

Hospitalstidende, Copenhagen

72: 1255-1296 (Dec. 19) 1929

Paranoia: Not Insanity. H. Helweg.—p. 1255.
*Miliary Tuberculosis in Adenomatous Thyroid: Case. J. Frederiksen and A. Portman.—p. 1286.

Miliary Tuberculosis in Adenomatous Thyroid Gland: Case.—In Frederiksen and Portman's case three phases are seen: (1) development of pulmonary tuberculosis, (2) goiter originating on a toxic basis, and (3) miliary tuberculosis in adenoma of thyroid gland, originating under symptoms of strumitis. The patient's temperature was subnormal for two weeks after operative treatment and has since during several months' observation been normal. The general condition is good and there are no signs of miliary spread elsewhere.

72: 1297-1324 (Dec. 26) 1929

*Phrenico-Exeresis: Forty-Two Cases. Stub-Christensen.—p. 1297.
*Variation of Sedimentation Reaction After Intake of Food. J. Frederiksen.—p. 1312.

Indications and Contraindications for Phrenico-Exeresis.—Stub-Christensen says that phrenico-exeresis in suitable cases is an effective and relatively safe intervention. The indications are, in the main, the same as for pneumothorax, but as the results of phrenico-exeresis do not equal those of an effective pneumothorax, the procedure is indicated only when pneumothorax cannot be done, in which case the intervention should always be considered. The following indications are given: as preliminary operation before thoracoplasty, in diseases of the base of the lung, in fibrocavernous tumor with a tendency to shrinking, and in chronic adhesive pleurisy with a constant stitch in the side. The contraindications are those for any collapse therapy, with the possible addition of more marked dyspepsia.

Sedimentation Reaction After Intake of Food.—Frederiksen determined the sedimentation reaction in thirty patients while fasting and after eating. In about 43 per cent the test after a meal showed a shifting of the sedimentation value beyond the margin of error.